An EFCO Company

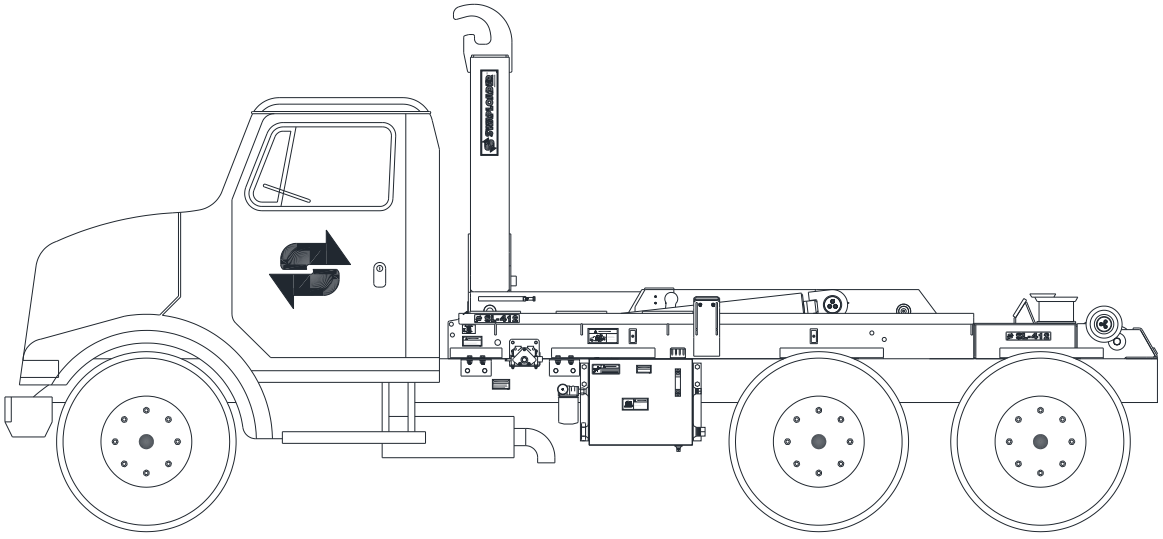
SWAPLOADER®

"HOOKED ON QUALITY"

U.S.A. LTD.

Model SL-412

Parts and Operations Manual



Hoist Serial Number: _____

SWAPLOADER U.S.A., LTD.
1800 N.E. BROADWAY AVENUE
DES MOINES, IA 50313

WARRANTY REGISTRATION CARD

Model_____ Serial No._____

MOUNTED ON VEHICLE:
Manufacturer _____
Model _____
Year _____
Wheel Base _____
Chassis Serial #_____
PTO Type _____
PTO Ratio _____

DISTRIBUTOR:
Name (print) _____
Address _____
City, State, Zip _____

The unit has been checked and serviced according to the Pre-delivery inspection report. The proper mechanical operation of the unit as described in the written operational instructions provided by SwapLoader U.S.A., Ltd. has been discussed with the customer.

_____ Date Installed_____
Customer Name (please print)

_____ Date Inspected_____
Address (please print)

_____
City, State, Zip (please print)

_____
Customer Phone Number (required)

_____ _____
Customer Signature Distributor Signature

Type of Application SwapLoader hoist will be used in:

- ☐ Waste Industry
- ☐ Construction
- ☐ Recycling
- ☐ Landscaping
- ☐ Tree/Nursery
- ☐ Roofing
- ☐ Public Works
- ☐ General Construction
- ☐ Other_____

PREDELIVERY CHECK LIST
SWAPLOADER ALL MODEL HOIST INSTALLATION

Conducted by: _____ **Date:** _____

Dealer: _____

Customer: _____

I. COMPONENT INFORMATION

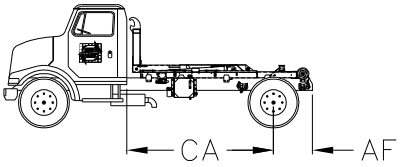
Hoist Serial No.: _____

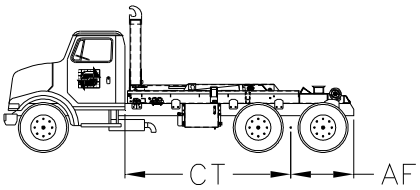
Truck Chassis: Identification No.: _____

GVW: _____

Distance from rear of cab to the Center Line of Rear Axle/Tandem (CA/CT): _____

Distance From Center Line of Rear Axle/Tandem to Rear of Hoist (AF): _____





PTO: Make: _____
Model: _____
Serial No.: _____
% of Engine RPM: _____

Hyd. Pump: Make: _____
Model: _____
Serial No.: _____

II. INSTALLATION TO CHASSIS

Were there any problems installing the hoist to the truck chassis? _____ YES _____ NO

If yes, please describe _____

_____

_____

_____ All bolts checked for proper tightness.
_____ Please include photos of the hoist installed on the truck chassis. Be sure to include at least one photo from each side.

III. CONTROLS

_____ Controls easy to reach from driver's seat.
_____ Movement of controls correct per installation instructions.

PREDELIVERY CHECK LIST
SWAPLOADER ALL MODEL HOIST INSTALLATION

IV. HYDRAULICS INSTALLATION

_____ Correct hydraulic oil level in reservoir
_____ Check for leaks
Any abnormal noise during operation: _____ YES _____ NO
If yes, explain: _____

WITH ENGINE OPERATING @ 1000 RPM, RECORD THE FOLLOWING INFORMATION:

Cycle time for dump mode: Up _____ Sec. Down _____ Sec.
Cycle time for load/unload mode: Unload _____ Sec. Load _____ Sec.
Filter pressure _____ PSI.
Main pressure, controls in neutral _____ PSI.
Main relief pressure when extending jib cylinder (bottomed out)_____PSI.
Main relief pressure when extending lift cylinders (bottomed out)_____PSI.

NOTE: Connect pressure gauge to fitting provided on inlet section of Hyd. Control Valve (Ref. Pt. No. 10P37 fitting on Hyd. Pump Circuit Drawing found in the Parts List section of the Hoist Operations Manual).

V. OPERATION

_____ Jib operates freely in both directions.
_____ Jib cannot be extended or retracted when raised in dump position or when pivot joint is tilted in unload position. Both safety hooks are fully engaged when jib is extended.
_____ Parts and operators manual in cab.
_____ Lubricate sliding jib and all grease zerks per installation instructions.

VI. DECALS

_____ All safety decals and product decals installed per enclosed decal drawing (found attached to the inside of the hoist operations manual cover or at the back of the Parts List section of the hoist operations manual).

ADDITIONAL COMMENTS:

_____

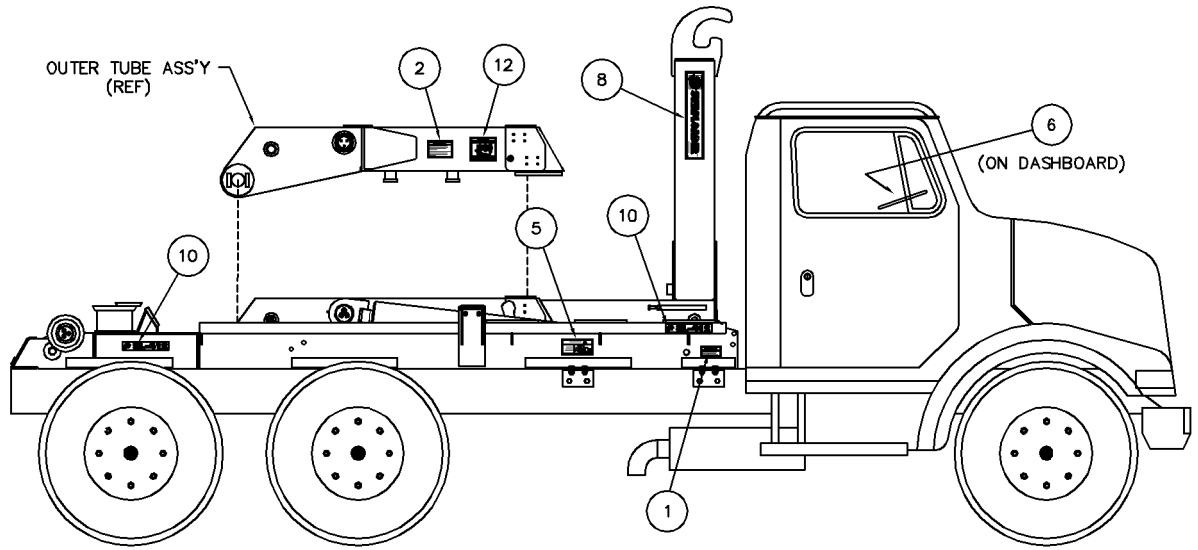
_____

_____

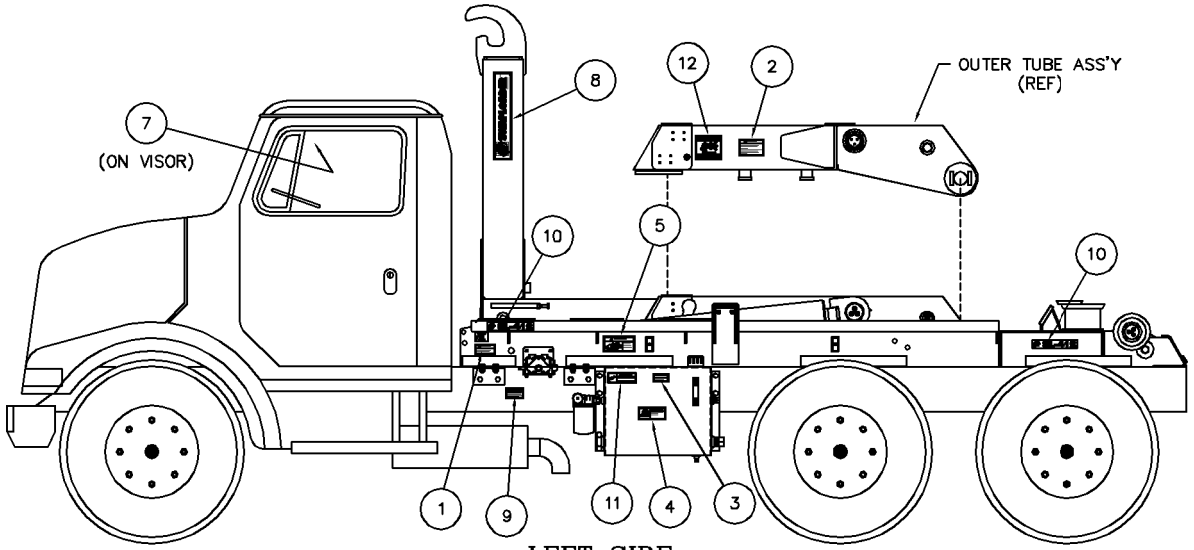
SEND COMPLETED FORM TO:

SWAPLOADER U.S.A., LTD.
1800 N.E. BROADWAY AVENUE
DES MOINES, IOWA 50313-2644

RETAIN ONE COPY FOR YOUR FILE.



RIGHT SIDE



LEFT SIDE

DECAL ASSEMBLY SL-412 (43H98)

PARTS PER 43H98

ITEM	QTY	PART	DECAL DESCRIPTION	WT-lb/ea
1	2	90P07	OPER & SERVICE MANUAL	--
2	2	90P08	CAUTION HOIST BODY	--
3	1	90P09	HYDRAULIC OIL SPEC	--
4	1	90P10	HYD OIL FLAMMABLILITY	--
5	2	90P11	WARNING DANGER	--
6	1	90P12	LEVER CONTROL	--
7	1	90P13	SAFETY INSTRUCTIONS	--
8	2	90P14	SWAPLOADER	--
9	1	90P18	RELIEF VALVE	--
10	4	91P10	SL-412	--
11	1	90P78	HIGH PRESSURE FLUID	--
12	2	91P06	LUBRICATION POINTS	--
			TOTAL	--

SWAPLOADER™ U.S.A. LTD.

TITLE

DECAL ASSEMBLY

DRAWING NO.	MODEL NO.	REV
43H-98	SL-412	

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Fixed Jib Base Hoist Assembly
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INTRODUCTION

SWAPLOADER U.S.A., LTD.

TO THE CUSTOMER

Your new SwapLoader Hoist was carefully designed and manufactured to give years of dependable service. To keep it operating efficiently, read the instructions in this manual thoroughly. It contains detailed descriptions and instructions for the efficient operation and maintenance of your SwapLoader. Each section is clearly identified so you can easily find the information that you need. Read the Table of Contents to learn where each section is located. All instructions are recommended procedures only.

Throughout this manual you will come across **"Dangers," "Warnings,"** or **"Cautions"** which will be carried out in bold type and preceded by the symbol as indicated to the left. Be certain to carefully read the message that follows to avoid the possibility of personal injury or machine damage.

Record your SwapLoader Hoist serial number in the appropriate space provided on the title page. Your SwapLoader dealer needs this information to give you prompt, efficient service when you order parts. It pays to rely on an authorized SwapLoader Distributor for your service needs. For the location of the Distributor nearest you, contact SwapLoader.

NOTE: It is SwapLoader's policy to constantly strive to improve SwapLoader products. The information, specifications, and illustrations in this publication are based on the information in effect at the time of approval for printing and publishing. SwapLoader therefore reserves the right to make changes in design and improvements whenever it is believed the efficiency of the unit will be improved without incurring any obligations to incorporate such improvements in any unit which has been shipped or is in service. It is recommended that users contact an authorized SwapLoader Distributor for the latest revisions.

SWAPLOADER, U.S.A., LTD.

1800 N.E. BROADWAY, DES MOINES, IOWA 50313

LIMITED WARRANTY STATEMENT

Effective September 1, 2009

SwapLoader U.S.A., Ltd., (SwapLoader), warrants to the original purchaser of any new SwapLoader product sold by an authorized SwapLoader distributor or service center, that such products are free of defects in material and workmanship. All SwapLoader products with an original factory invoice date of September 1, 2009 or later qualify for warranty as defined in this Limited Warranty Statement.

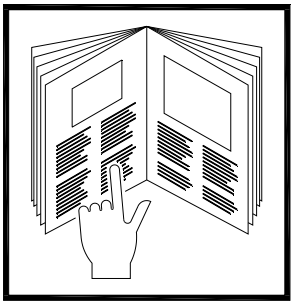
- Repair or replacement of parts on SwapLoader products are covered under warranty for forty-eight (48) months from date of Retail Sale by an authorized SwapLoader Distributor or service center, subject to any applicable federal, state or local taxes, and not to extend beyond sixty (60) months from the original factory invoice date. SwapLoader will, at its discretion, either repair the defective parts or replace them with equivalent parts, subject to the conditions below.
- Labor charges authorized by the SwapLoader Warranty Department are covered under warranty for a period of twelve (12) months from the date of Retail Sale by an authorized SwapLoader Distributor or service center, and not to extend beyond twenty-four (24) months labor from the original factory invoice date.
- Warranty Registration Card must be returned within 15 days of Retail Sale of SwapLoader hoist to SwapLoader, Des Moines, Iowa. If unit has not been registered, then the warranty start date will revert to the original factory invoice date. Warranty Registration is the ultimate responsibility of the owner and may be accomplished by the completion and return of the product registration form included in the SwapLoader hoist manual. If the owner is not sure that product registration is completed, then SwapLoader encourages them to contact us at 888-767-8000 to confirm.
- Defective parts must be reported to SwapLoader within 30 days of discovery on a SwapLoader warranty claim report form. A Return Goods Authorization (RGA) number must be issued to the claiming party prior to the return of any defective part to be considered for warranty.
- Warranty service must be performed by a distributor or service center authorized by SwapLoader to sell and/or service SwapLoader products, which will use only new or remanufactured parts or components furnished by SwapLoader U.S.A., Ltd. SwapLoader will invoice the distributor or authorized service center for the replacement parts and freight. Upon completion of the repair any defective parts to be returned for warranty consideration must be returned freight prepaid with a copy of the SwapLoader issued RGA form and a copy of the completed warranty claim report form. Upon evaluation of the returned parts, once warranty is approved, credit will be issued to the appropriate account for the approved warranty costs which may include parts, labor, and/or freight.
- The warranty covers only defective material and workmanship. It does not cover depreciation or damage caused by normal wear and tear, accident, mishap, untrained operators, or improper or unintended use. The owner has the obligation of performing routine care and maintenance duties as stated in SwapLoader's written instructions, recommendations, and specifications. Any damage resulting from owner/ operator failure to perform such duties shall void the coverage of this warranty. The cost of labor and supplies associated with routine maintenance will be paid by the owner.
- In no event will SwapLoader, the SwapLoader distributor or any company affiliated with SwapLoader be liable for business interruptions, costs of delay, or for any special, indirect, incidental or consequential costs or damages. Such costs may include, but are not limited to loss of time, loss of revenue, loss of use, wages, salaries, commissions, lodging, meals, towing, hydraulic fluid, travel, mileage, or any other incidental costs.
- SwapLoader is not responsible for the removal or replacement of accessories (fenders, toolbox, etc.).
- Warranty shall not apply if the equipment is operated at capacities in excess of factory recommendations.
- Warranty is expressly void if the seal on the main relief control valve has been broken.
- SwapLoader will ship the replacement part by the most economical, yet expedient means possible. Expedited freight delivery will be at the expense of the owner.
- Warranty is expressly void if serial number plate or stamping is tampered with.

IT IS EXPRESSLY UNDERSTOOD AND AGREED THAT THERE ARE NO WARRANTIES MADE BY THE MANUFACTURER OR ITS AGENTS, REPRESENTATIVES OR DISTRIBUTORS, EITHER EXPRESSED, IMPLIED, OR IMPLIED BY LAW, EXCEPT THOSE EXPRESSLY STATED ABOVE IN THIS STANDARD LIMITED WARRANTY AGAINST DEFECTS IN MATERIAL AND WORKMANSHIP. THE MANUFACTURER AND ITS AGENTS, REPRESENTATIVES AND DISTRIBUTORS SPECIFICALLY DISCLAIM ANY IMPLIED WARRANTY OR MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE.

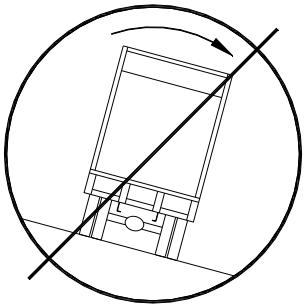
SWL Warranty 083109

SAFETY SUGGESTIONS

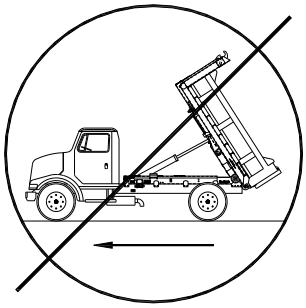
1. Do not operate or service this equipment until you have been properly trained and instructed in its use and have read the operation and service manual.

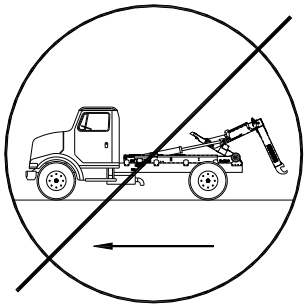


2. Do not operate this equipment on uneven ground.



3. Do not drive with the hoist in the dump position or with the hook to the rear.



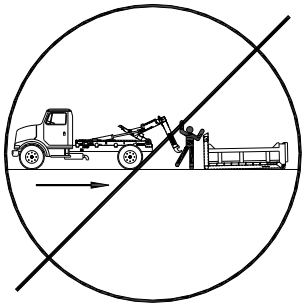


4. Do not exceed 1,500 Engine RPM when operating the Power Take Off (P.T.O.). Never leave the P.T.O. in gear while transporting.

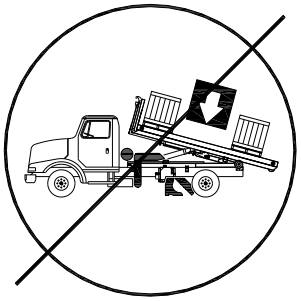
5. The hoist must be used with containers that properly fit the hook and rear holddowns. The container specifications must match the hoist specifications.

6. Keep the containers and hoist in good working order. **DO NOT** use if repairs are needed. Perform periodic inspections and maintenance as required by the maintenance section of the operator's manual.

7. Make sure work area is clear of people and obstacles prior to dumping or unloading containers. SwapLoader strongly recommends that a back up alarm be installed on the truck chassis. The operation of the hook hoist is that the truck is backed up to the body to pick it up and so there is a potential pinch point between the body and the hook.

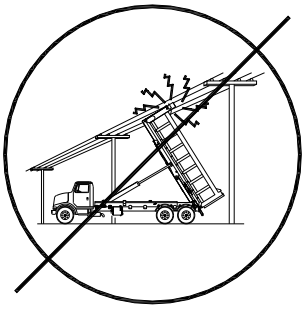


8. Any container, which is on the hoist, **MUST** be unloaded prior to performing any repairs or maintenance to the hoist. Also, **DO NOT** allow any person to work on or be under the hoist in a raised position without first installing adequate safety blocks to eliminate all possibility of the hoist accidentally lowering. SwapLoader strongly recommends that if possible the container should be dismounted from the hoist prior to performing any maintenance to the hoist.



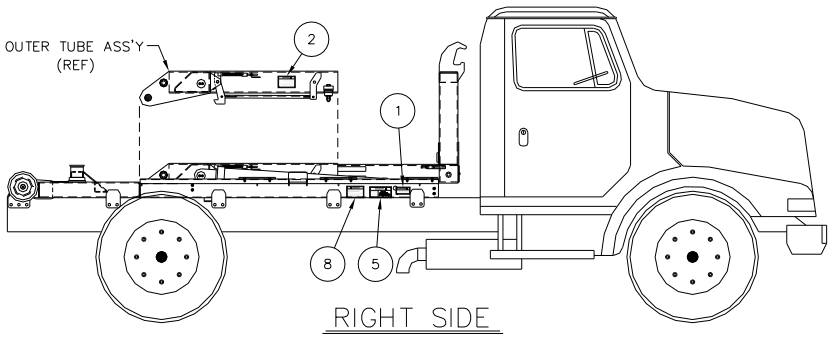
9. It is the responsibility of the owner and/or installer to insure that any additional safety devices required by state or local codes are installed on the SwapLoader Hoist and/or Truck Chassis.

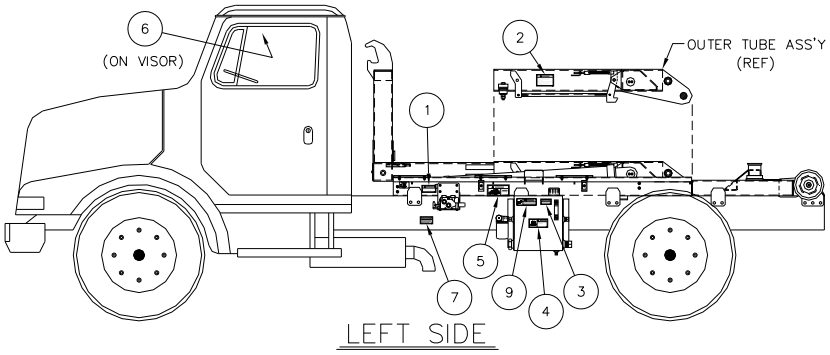
10. Keep away from overhead power lines. Serious injury or death can result from contact with electrical lines. Use care when operating hoist near electrical lines to avoid contact.



11. Avoid contact with high-pressure fluids. Escaping fluid under pressure can penetrate the skin causing serious injury. Avoid hazardous conditions by relieving pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure. Search for leaks with a piece of cardboard, while protecting hands and body from the high-pressure fluids.

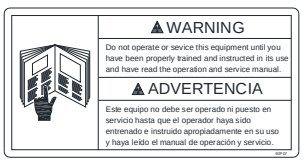
12. It is the responsibility of the owner to provide proper maintenance of the Safety Decals. Regular inspection and replacing of Safety Decals that have any fading or damage which would impair their function should be done (See the illustration on the following page for location of Safety Decals).

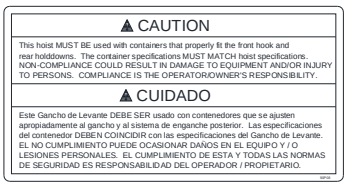
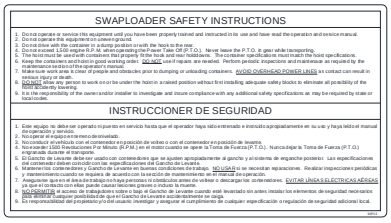
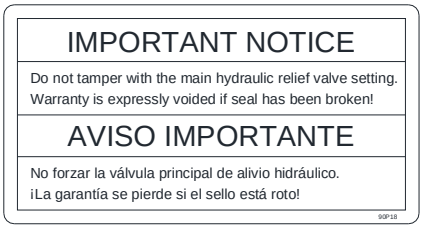


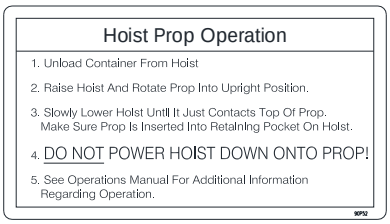
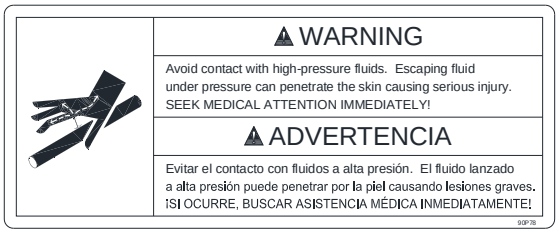


ITEM	QTY	P/N	DESCRIPTION
1	2	90P07	OPERATION & SERVICE MANUAL
2	2	90P08	HOIST-BODY SPECIFICATIONS
3	ONE	90P09	HYDRAULIC OIL SPECIFICATIONS
4	ONE	90P10	HYDRAULIC OIL FLAMMABLE
5	2	90P11	HOIST FALLING
6	ONE	90P13	SAFETY INSTRUCTIONS
7	ONE	90P18	RELIEF VALVE
8	ONE	90P52	PROP DECAL
9	ONE	90P78	HIGH-PRESSURE FLUID

The following is a list of all the Swaploader Safety Decals, and their part numbers. Please use when reordering replacement decals.

90P07 – OPERATIONS & SERVICE MANUAL	 WARNING Do not operate or sevice this equipment until you have been properly trained and instructed in its use and have read the operation and service manual. ADVERTENCIA Este equipo no debe ser operado ni puesto en servicio hasta que el operador haya sido entrenado e instruido apropiadamente en su uso y haya leído el manual de operación y servicio.

90P08 – HOIST-BODY SPECIFICATIONS	
90P09 – HYDRAULIC OIL SPECIFICATIONS	
90P10 – HYDRAULIC OIL FLAMMABLE	
90P11 – HOIST FALLING	
90P13 – SWAPLOADER SAFETY INSTRUCTIONS	
90P18 – RELIEF VALVE	

90P52 – PROP DECAL (OPTIONAL)	
90P78 – HIGH-PRESSURE FLUID	

INSTALLATION

INITIAL INSPECTION

When the SwapLoader hoist is received from the factory, you should inspect the hoist for damage, which may have occurred in shipment. If damage has occurred, you should contact the shipper immediately. Be sure to note any damage or missing items on bill of Lading.

You should then check the hoist to insure you have received all the parts as indicated by the Packing List and the Ship Loose Box List.

If you have any problems, shortages, or questions, please contact SwapLoader U.S.A., Ltd. immediately.

GENERAL INSTALLATION PROCEDURE

The installation of the SwapLoader on a truck chassis will generally follow these steps:

1. Install hoist assembly onto truck chassis.

2. Mount the hydraulic control valve to the hoist and install the hydraulic plumbing from the control valve to the hydraulic cylinders. Then install the control levers in the cab and route the control cables or air lines to the hydraulic control value assembly.

3. Install the hydraulic tank, hydraulic filter, and hydraulic plumbing between the hydraulic tank and the control valve assembly.

4. Select and install the P.T.O. on the truck transmission. (Note: This can be done prior to hoist installation on the truck chassis.)

5. Install the hydraulic pump and the plumbing from the pump to the hydraulic tank and control valve assembly.

6. Fill the hydraulic tank with oil, bleed the air from the pump suction line, and start up the unit.

Although SwapLoader attempts to include the mounts and attaching fasteners with each hoist unit, your particular installation may require some additional mounts or modifications. If you have problems with your installation, please contact SwapLoader at 1-888-767-8000, as we may be aware of another customer who has installed a SwapLoader on a similar truck chassis.

HOIST INSTALLATION TO TRUCK CHASSIS

1. Place the SL-412 hoist assembly on the truck chassis. The truck chassis mounting surface should be flat without any steps or protrusions. If necessary shim bars need to be added to ensure a flat surface on which to support hoist. The truck chassis should meet the following minimum specifications (See Figures A):

   RBM for each frame channel: 2,000,000 in.-lb.
   Total RBM: 4,000,000 in.-lb.
   Minimum clear frame rail for mounting: 169" (See Fig. A)
   Front Axle Cap: 12,000 lb. (Min)
   Total Rear Axle Capacity: 34,000 lb. (Min)
   CA Dim: 102” to 114” (114” preferred)

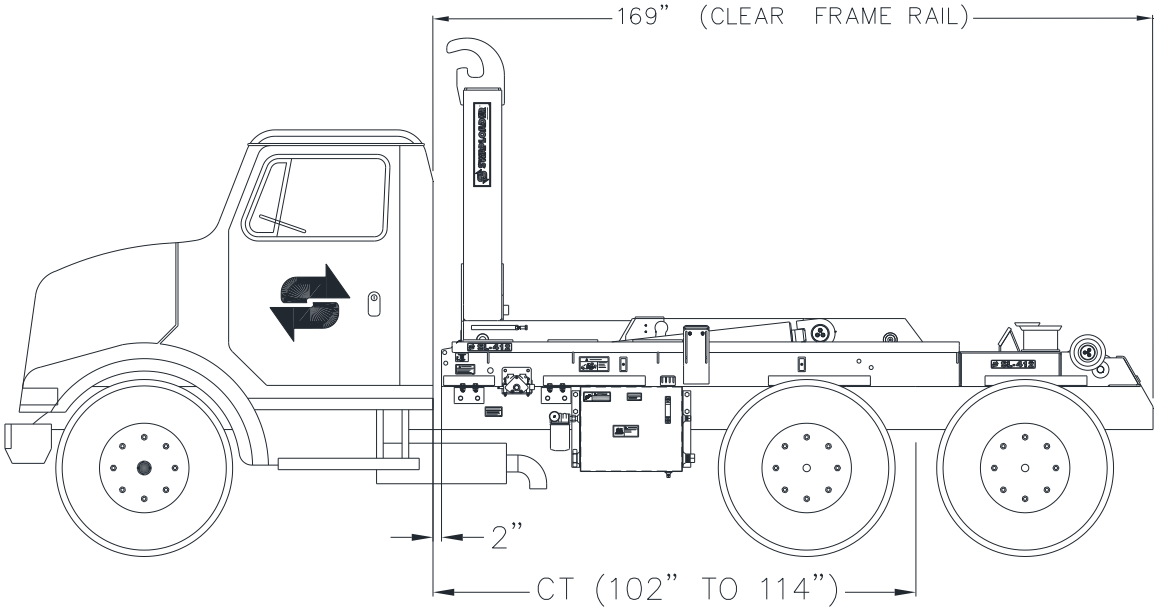


Figure A

Note: The above specifications are a minimum requirement. It is the responsibility of the owner/operator to ensure the completed chassis meets or exceeds all federal, state, and local regulations. Also, the hoist should not be used to lift and haul any load that exceeds the load rating of any of the individual components of the completed chassis (tires, axles, suspension, etc.)

The clear frame dimension indicated in the picture above allows for the overall length of the hoist plus 5 inches for cab clearance and rear light bar mounting. Extra frame length may be needed to allow for mounting additional accessories (e.g. Cab Guard, Tarper, Light Kit, Stabilizer, etc.). For example, when mounting a light kit on a truck with a long CA, check that the hoist and the light kit are positioned far enough back to eliminate any interference between the fender and the light kit. You should also consider the final weight distribution with regard to the bridge code when positioning the hoist.

2. The SL-412 features chassis mount brackets (Pt. No. 88H21) that bolt to the mainframe of the hoist and the chassis of the truck.

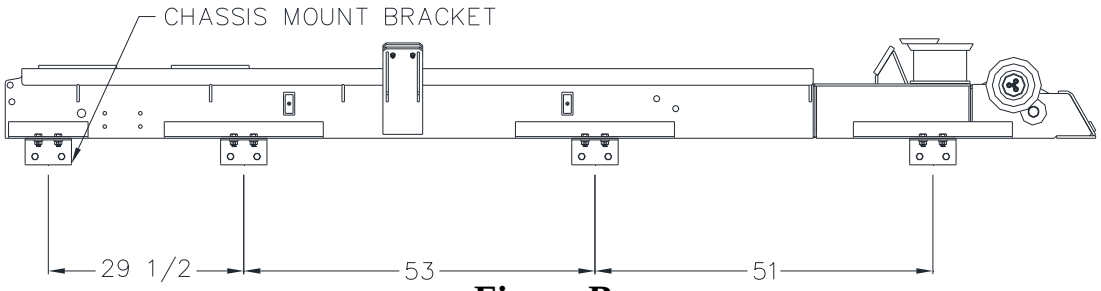


Figure B

Bolt the mount brackets to the side of the hoist as indicated in Figure B. Adjust locations as necessary to miss chassis suspension, brackets etc. When positioning the brackets allow for mounting the control valve assembly and the hydraulic tank. You should consult the truck chassis supplier for any limitations regarding drilling mount holes in the truck chassis frame rails. Typically, the holes must be at least 2 ¾" from the top of the truck chassis rails (Reference figure C).

Once the locations of the mount brackets have been determined, use the mount brackets as a template for marking the mounting holes in the truck chassis frame rails. Drill the 21/32 diameter holes required and attach the brackets to the truck chassis with the 5/8-inch diameter bolts, washers, and locking hex nuts provided. Torque to 220 ft.lbs.

Bolt the mount brackets to the hoist mainframe as indicated on Figures C thru E. You may need to modify the mount brackets or add shim plates to allow for variances in the width of the truck chassis as well as to allow for top rivets, stepped channels, etc.

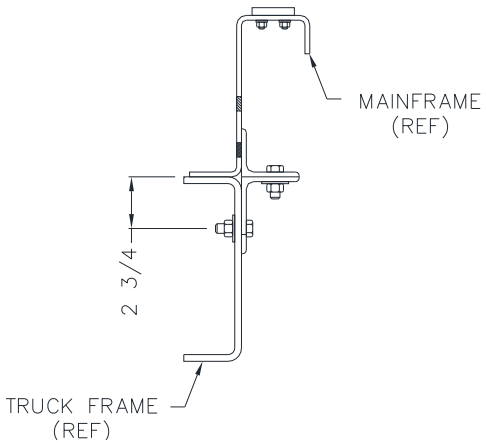
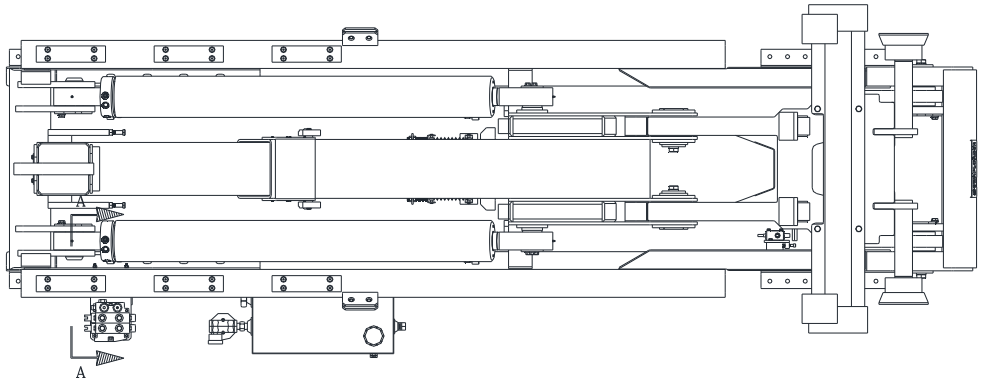
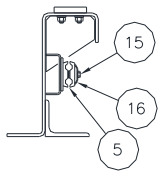


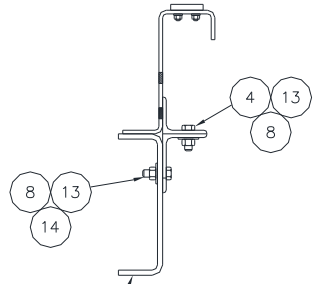
Figure C



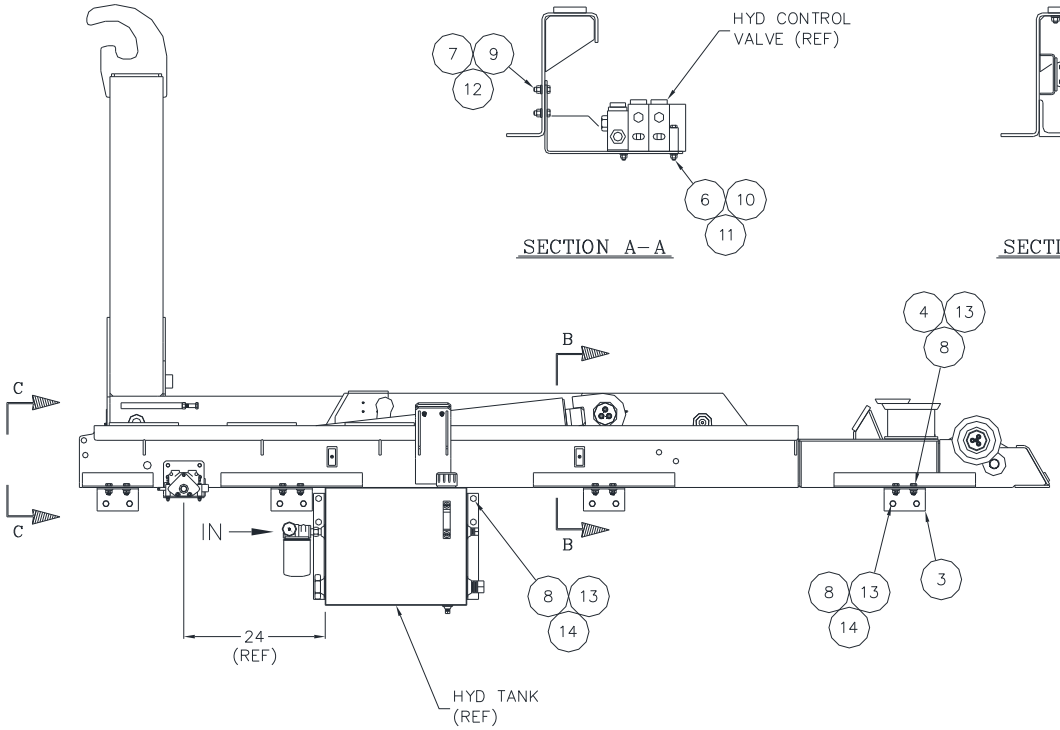
SECTION A–A



SECTION B–B



SECTION C–C



PARTS PER 43H97				
ITEM	QTY	PART	DESCRIPTION	WT-lb/ea
1	1	43H99	PARTS & OP MANUAL	--
2	1	43H98	DECAL ASSEMBLY	--
3	8	88H21	CHASSIS MOUNT BRACKET	3.27
4	16	00P56	5/8-11X1 1/2 BOLT	0.18
5	2	10P66	HOSE CLAMP	0.04
6	3	00752	5/16 WASHER	0.01
7	4	00755	3/8 LOCK WASHER	0.01
8	36	00785	5/8 WASHER	0.04
9	4	00P14	3/8-16 HEX NUT	0.02
10	3	00P19	5/16-18 X 2 3/4 HHCS	0.06
11	3	00P20	5/16-18 HEX NUT	0.01
12	4	00P44	3/8-16 X 1 1/2 BOLT	0.07
13	36	00P55	5/8 LOCK NUT	0.11
14	20	00P69	5/8 X 2 HHCS	0.27
15	2	10P28	5/16 X 1 1/4 HHCS	0.03
16	2	10P29	COVER PLATE	0.10
			TOTAL	40.82

SWAPLOADER™ U.S.A. LTD.

TITLE
HOIST INSTALLATION KIT

DRAWING NO.	MODEL NO.	REV
43H-97	SL-412	

CONTROLS INSTALLATION - MANUAL

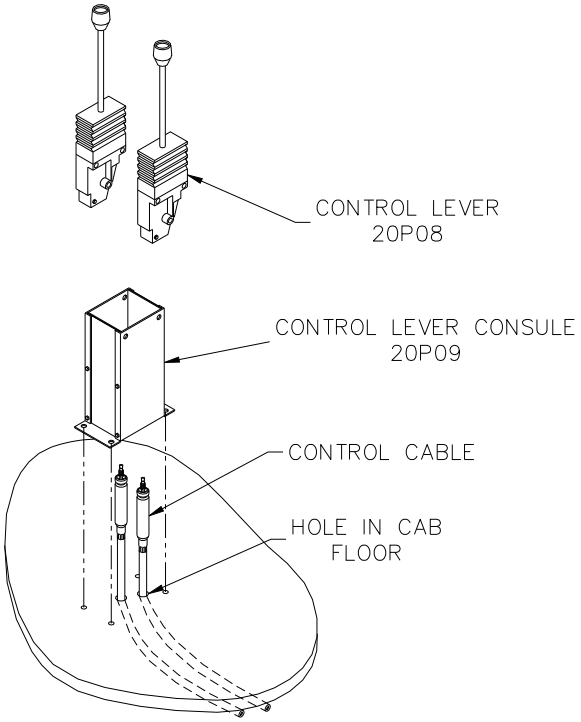
1. Attach the valve mount bracket (Pt. No. 41H01) to the mainframe as indicated on Dwg. No. 90H57 with the fasteners provided (See Drawing 43H97).

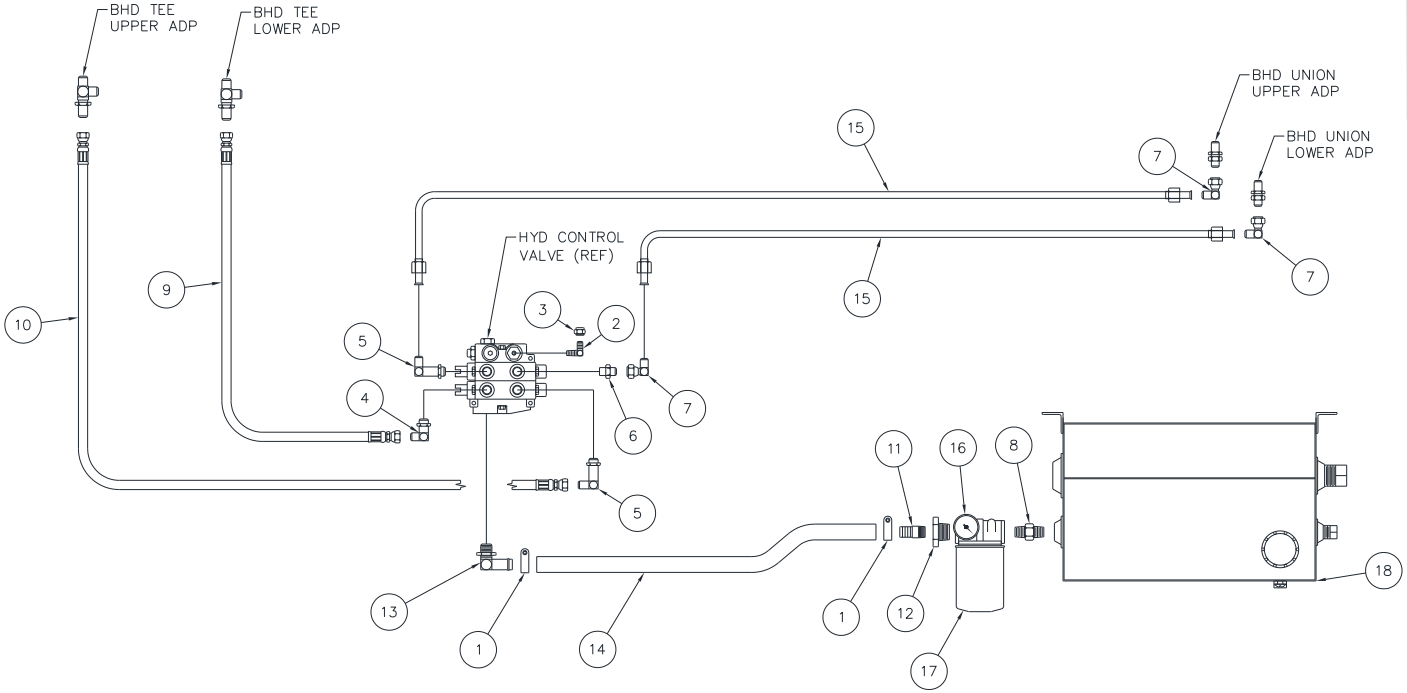
2. Mount the hydraulic control valve assembly (Pt. No. 20P88) to the valve mount bracket as shown on Drawing No. 90H57 with the fasteners provided.

3. Install the hydraulic adapters, connect the hydraulic tubing (Pt. No. 13P11), and connect the hydraulic hose assemblies (Pt. Nos. 11P98 and 11P99) to the control valve assembly as indicated on Drawing No. 91H13. The clamp assemblies that are provided in the Loose Parts Box should support the tubing (See Drawing 43H31).

4. Determine the best location in the cab for the control levers (Pt. No. 20P08). The location should be such that the controls can be easily reached while operating the truck. A control lever console (Pt. No. 20P09) is provided to facilitate the mounting of the control levers.

5. Assemble and install the control lever console (See diagram below). Typically the console is fastened to the floor of the cab and the control cables are routed through additional holes drilled in the floor. Your particular installation may require that additional brackets be fabricated or other modifications made.





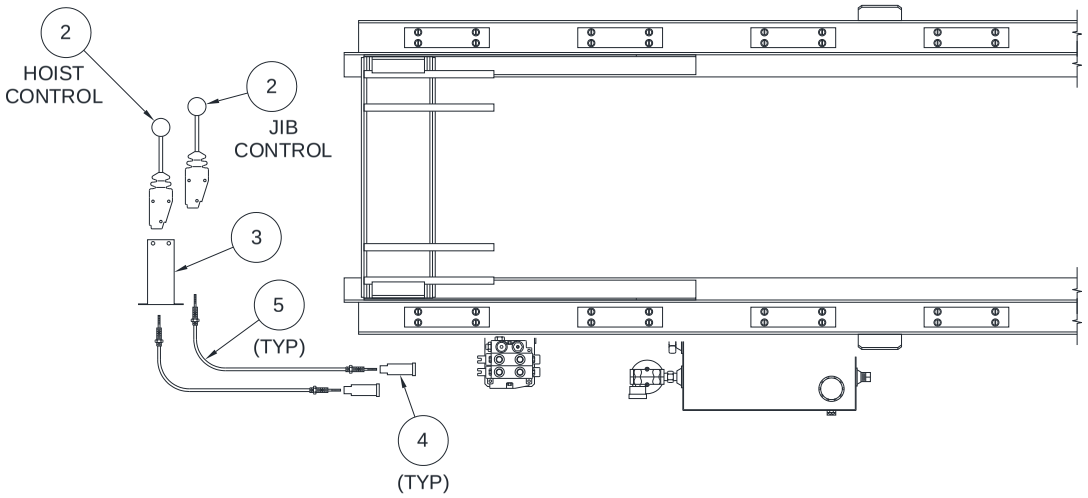
PARTS PER 91H18				
ITEM	QTY	PART		WT-lb/ea
1	2	10P21	T-BOLT CLAMP, 1 1/2ø	0.10
2	1	10P37	ADP, HYD MJIC / MP 90°	0.30
3	1	10P38	ADP, HYD FMJIC CAP	0.10
4	1	11P04	ADP, HYD MJIC / ORB 90°	0.40
5	2	11P05	ADP, HYD MJIC / ORB LL 90°	0.40
6	1	11P06	ADP, HYD MJIC / ORB	0.30
7	3	11P07	ADP, HYD MJIC/ FMJIC SVL 90°	0.40
8	1	11P78	ADP, HYD MP / MP	0.70
9	1	13P08	HOSE ASSY HP 1/2 X 23	1.35
10	1	11P98	HOSE ASS'Y 1/2 H.P. x 28	1.40
11	1	12P19	ADP, HYD HOSE INS / MP	0.30
12	1	12P20	ADP, HYD MP / FP	0.30
13	1	12P26	ADP, HYD HOSE INS / ORB 90°	0.60
14	1	12P31	HOSE 1 LP x 30	1.65
15	2	13P20	HYD TUBING-REAR	3.74
16	1	20P64	FILTER INDICATOR GAUGE	–
17	1	20P61	HYD FILTER	4.50
18	1	20P86	HYD TANK – 30 GAL	73.00
			TOTAL	94.58

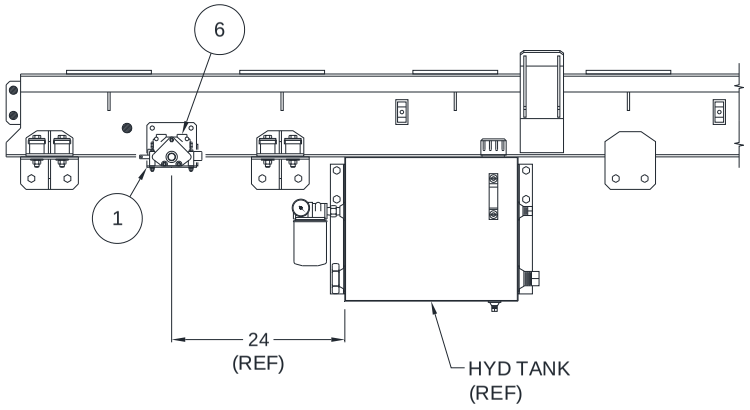
SWAPLOADER™ U.S.A. LTD.

TITLE
HYD SUB-ASSY TANK CIRCUIT

DRAWING NO.	MODEL NO.	REV
91H-18	SL-412	

PARTS LIST			
ITEM	QTY	P/N	DESCRIPTION
1	ONE	41H01	VALVE MOUNT BRACKET WDMT
2	2	20P08	REMOTE VALVE CONTROL HANDLE
3	ONE	20P09	CONTROL HANDLE MOUNT CONSOLE
4	2	20P10	BONNET CONNECTION KIT
5	2	20P40	CONTROL CABLE 96" LG
6	ONE	20P88	HYD VALVE ASS'Y





NOTE:
A 2 SECTION CONTROL VALVE ASS'Y IS SHOWN. A 3 SECTION CONTROL VALVE ASS'Y IS REQUIRED WHEN A STABILIZER IS UTILIZED

SWAPLOADER

MANUAL CONTROL ASS'Y - 2 SECTION

SL-330/400/406/412

90H57 ~ REV A

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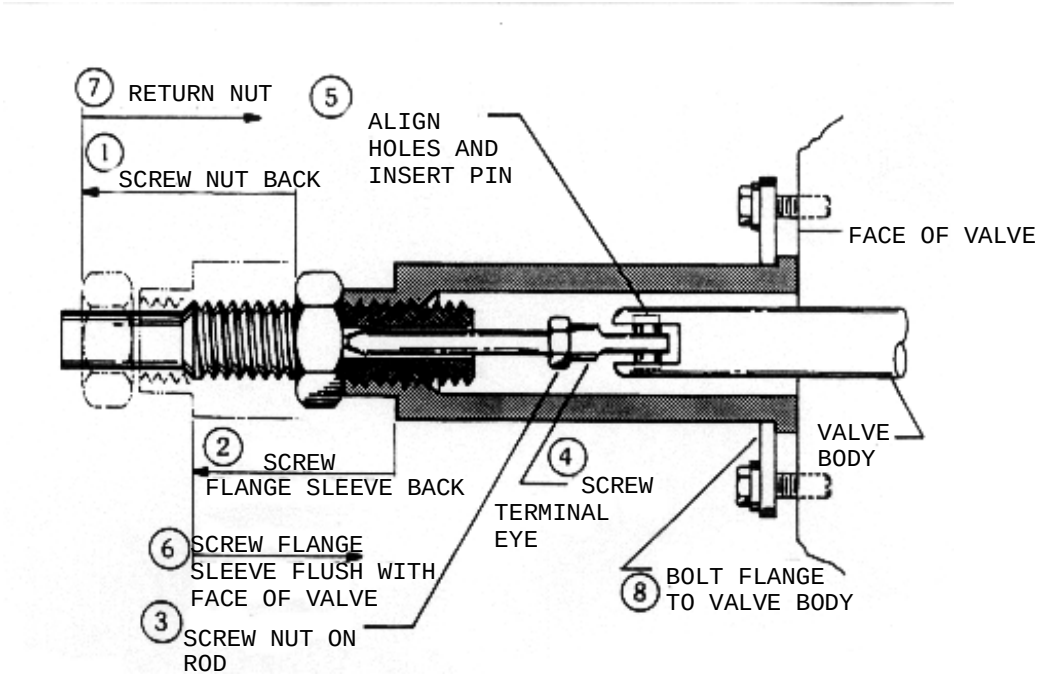
6. Attach the control cables to the control levers and route the cable through the holes in the cab. Install the control levers in the console. Levers should be installed such that when the levers are pushed forward the control cable is extended. See Drawing No. 90H57 (Manual Control Assembly) for control lever orientation.

7. Route the cables to the control valve location and attach them to the control valve with the bonnet connection kits provided (Pt. No. 20P10). See the following instruction sheet for installation procedures. The control cables supplied are 96 inches long. Your particular mounting may require different length control cables, which can be purchased locally or through Swaploader. Take proper care when routing the control cables, as a good cable path is essential for a proper operating system. Keep bends in the cable path to a minimum and be as generous as possible. Under no circumstances should any bend be tighter than an 8" radius. Protect the cable from heat above 225 degrees F. and avoid hot areas such as exhaust pipes, etc. Protect the cable from physical damages such as pinching or crushing, and do not use cable supports, which may crush or deform the cable. Allow room for flexing where the cable is attached to moving parts of the equipment, so that the cable is neither kinked nor stretched.

INSTALLATION PROCEDURE FOR A HYDRAULIC CONTROL CABLE TO HYDRAULIC VALVE WITH BONNET CONNECTION KIT

1. Turn .750-16 UNF Jam Nut entire length of Threaded Hub back over the Cable. Place Flange onto Sleeve.
2. Turn Flange/Sleeve Assembly entire length of Threaded Hub back over the Cable.
3. Turn .250-28 UNF Jam Nut onto Threaded Rod until it bottoms.
4. Turn Terminal Eye onto Treaded Rod until it bottoms against Jam Nut. (Minor adjustments may be necessary to align Terminal Eye with spool yoke.)
5. Slide the Terminal Eye into yoke on spool and align the holes. Insert Clevis Pin through yoke and Terminal Eye holes. Install Retaining Ring into groove between Terminal Eye and one side of the Yoke.
6. Now, with the Cable attached to the valve and control head, turn the Flange/Sleeve Assemble back onto the Threaded Hub until it is flush with the valve face. When turning on the Flange/Sleeve Assembly, make sure that the control head remains in neutral.
7. Thread the .750-16 UNF Jam Nut back over Threaded Hub and tighten against the Sleeve to lock in position.
8. Bring Flange into position on bolt assembly to valve housing.

NOTE: FOR WORK SECTION NEXT TO INLET COVER, USE SPACER KIT.


7 RETURN NUT
5 ALIGN HOLES AND INSERT PIN
1 SCREW NUT BACK
FACE OF VALVE
VALVE BODY
2 SCREW FLANGE SLEEVE BACK
4 SCREW TERMINAL EYE
6 SCREW FLANGE SLEEVE FLUSH WITH FACE OF VALVE
8 BOLT FLANGE TO VALVE BODY
3 SCREW NUT ON ROD

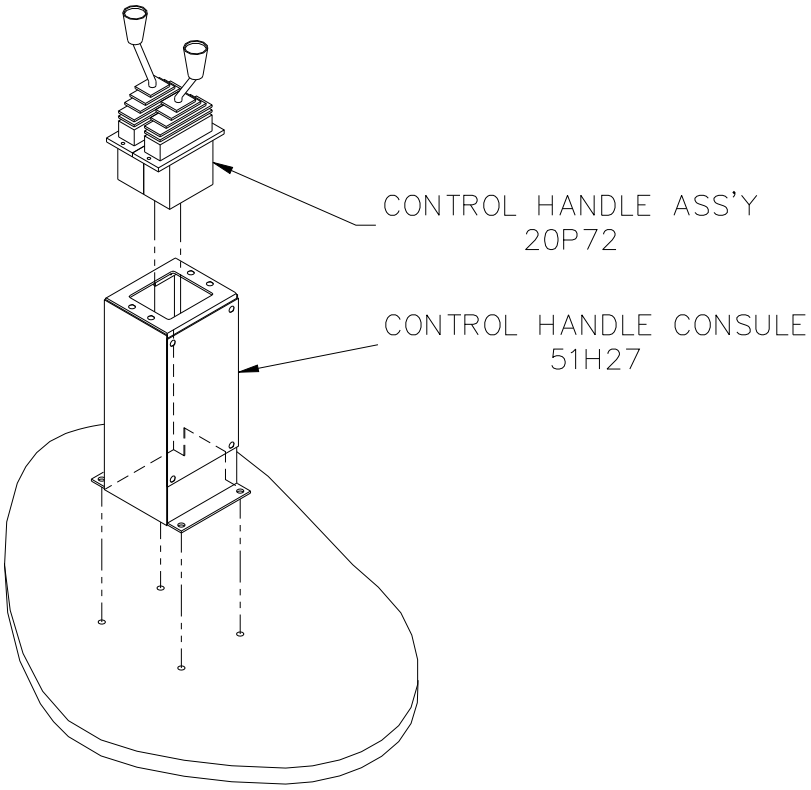
CONTROLS INSTALLATION - AIR SHIFT (OPTION)

1. Attach the valve mount bracket (Pt. No. 41H01) to the mainframe as indicated on Drawing No. 90H58 with the fasteners provided (See Drawing 43H31).

2. Mount the hydraulic control valve assembly (Pt. No. 20P88) to the valve mount bracket as shown on Drawing No. 90H58 with the fasteners provided. Attach the airshift kits (Pt. No. 20P95) to the hydraulic control valve. Reference installation instructions included with the airshift kits.

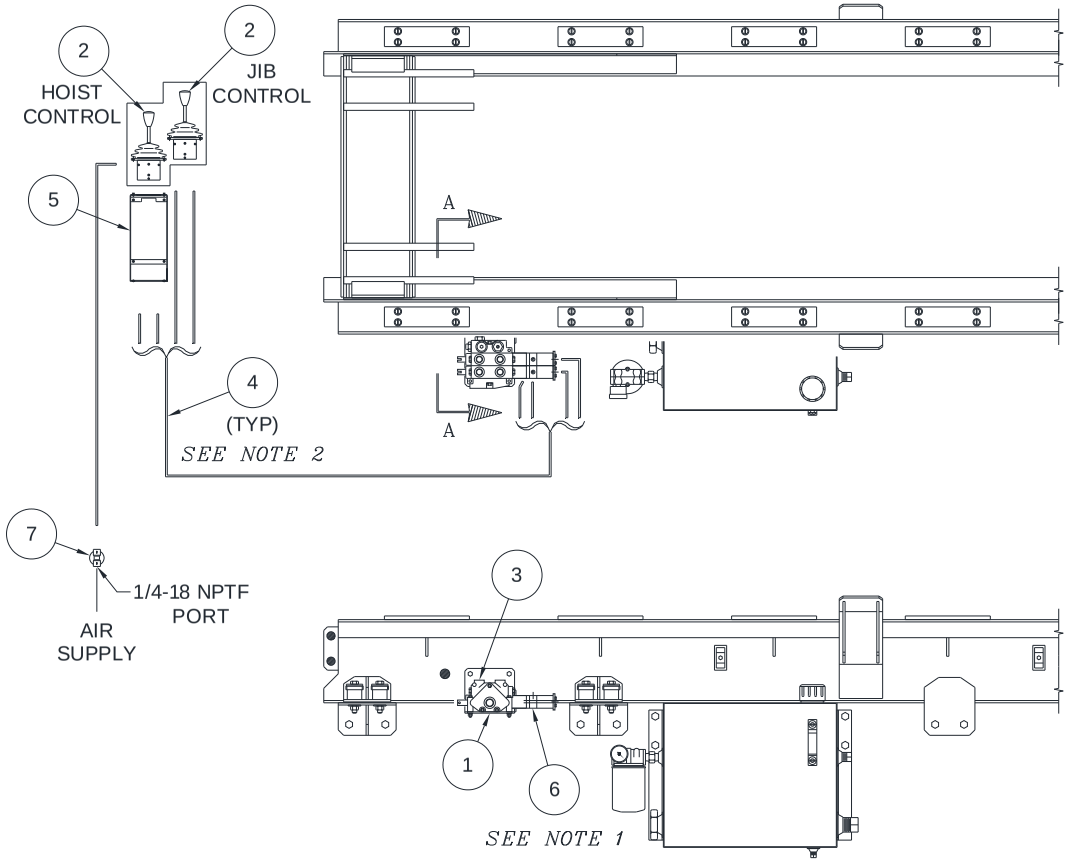
3. Install the hydraulic adapters and connect the hydraulic hose assemblies (Pt. Nos. 11P98 and 11P99) and the hydraulic tubing (Pt. No. 13P11) to the control valve assembly as indicated on Drawing No. 91H13. The clamp assemblies that are provided in the Loose Parts Box should support the tubing (See Drawing 43H31).

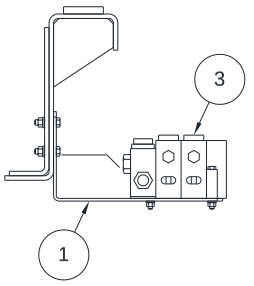
4. Determine the best location in the cab for the control handle assembly (Pt. No. 20P72). The location should be such that the controls can be easily reached while operating the truck. A control handle console (Pt. No. 51H27) is provided to facilitate the mounting of the control handles (See diagram below).



5. Install the air fittings and hose as shown on Drawing No. 90H60 (Air Circuit, Control Valve). An air pressure protection valve (Pt. No. 20P74) is provided so you can tap into the truck's air supply without jeopardizing the integrity of the air system. The air hose is provided in bulk length, which you can cut to length as required for running the air lines. Take care in routing the air lines and avoid hot areas such as exhaust pipes, etc.

PARTS LIST					
ITEM	QTY	P/N	DESCRIPTION	WT-lb/ea	REMARKS
1	ONE	41H01	VALVE MOUNT BRACKET	7.12	
2	ONE	20P72	CONTROL HANDLE ASS'Y	1.60	
3	ONE	20P88	HYD CONTROL VALVE ASS'Y	27.00	
4	ONE	12P94	AIR LINE KIT	1.40	
5	ONE	51H27	AIR CONTROL CONSOLE ASS'Y	6.23	
6	2	20P95	HYD VALVE SECTION AIR SHIFT KIT	1.42	
7	ONE	20P74	AIR PRESSURE PROTECTION VALVE	0.59	WM778A
				46.78	TOTAL





SECTION A-A

NOTE:
1. 20P95 AIR SHIFT KIT TO BE INSTALLED ON HYD CONTROL VALVE BY HOIST INSTALLER. REFERENCE INSTALLATION INSTRUCTIONS INCLUDED WITH THE AIR SHIFT KIT.
2. SEE DRAWING 90H60 FOR AIR SHIFT KIT PLUMBING DIAGRAM.

SWAPLOADER™ U.S.A. LTD.

AIR CONTROL ASS'Y - 2 SECTION

SL-330/400/406/412

90H58 ~ REV C

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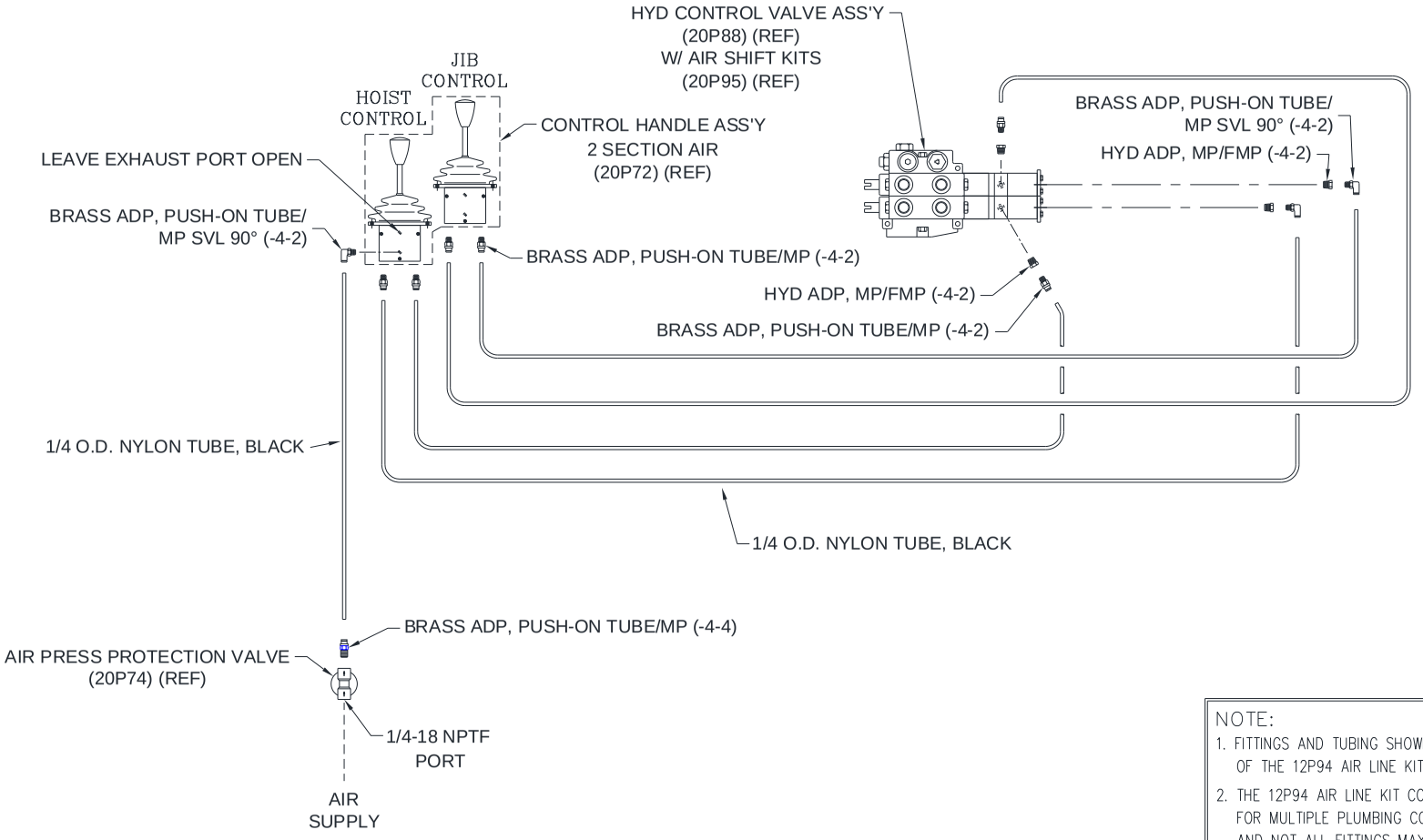

NOTE:
1. FITTINGS AND TUBING SHOWN ARE PART OF THE 12P94 AIR LINE KIT.
2. THE 12P94 AIR LINE KIT CONTAINS FITTINGS FOR MULTIPLE PLUMBING CONFIGURATIONS AND NOT ALL FITTINGS MAY BE UTILIZED.

SWAPLOADER™ U.S.A. LTD.

AIR CIRCUIT, CONTROL VALVE - 2 SECTION

SL-330/400/406/412

90H60 ~ REV A

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HYDRAULIC TANK INSTALLATION

1. Select a location to mount the hydraulic tank. Reference Figure F or Drawing No. 90H57 for the suggested location of the hydraulic tank to the rear of the control valve assembly on the left-hand side of the truck. The hydraulic hoses have been sized for the tank to be mounted in this general area. The tank can be located on the right-hand side or behind the cab, if necessary, which means longer hoses may be required.

3. Drill four (4) holes for 5/8-inch diameter bolts (provided) in the mount angle of the hydraulic tank (two per angle) and the frame rails of the truck chassis. Mount the hydraulic tank and install the hydraulic filter. Install the hydraulic return hose and the hose barb fitting between the filter and the control valve assembly as shown on Drawing No. 91H13. The hose length can be shortened if necessary. Secure the hose to the barb fittings with the hose clamps provided.

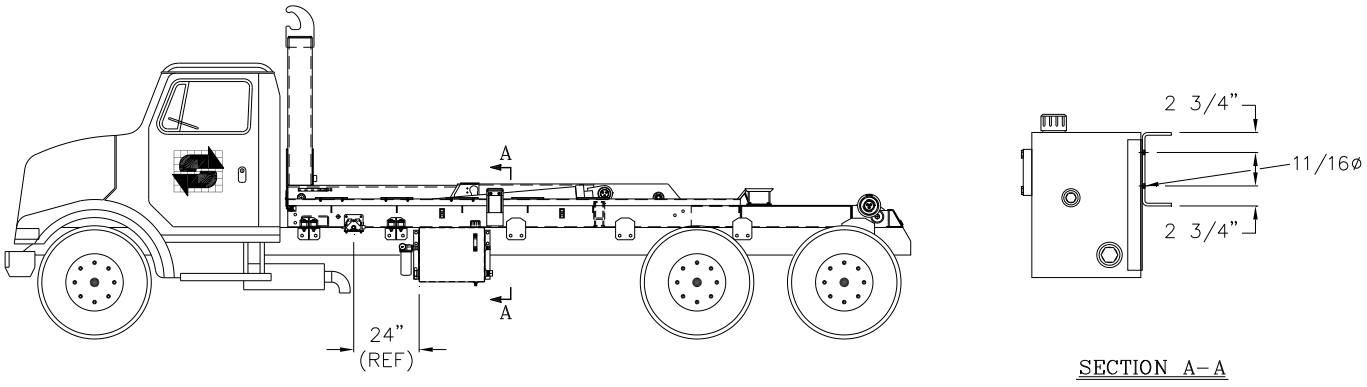


Figure F

P.T.O. SELECTION

The next step is to select and install a direct drive type P.T.O. to the transmission. Please contact your local truck equipment representative for the correct unit sized on the following criteria:

P.T.O. Torque Rating:	200 ft.-lbs. (See Note 1)
Power at 1500 RPM:	57 H.P. (See Note 1)
Mount Flange (For Driveline Installation)	SAE B 4 Bolt
Hydraulic Pump Keyed Shaft Specifications:	7/8-13T 16/32 DP
Hydraulic Pump Rotation:	**L.H. or R.H. Available (See Note 2).**

NOTE 1: P.T.O. torque and power requirements are based on the unit operating at main relief pressure. Normal operating pressure will be less.

NOTE 2: P.T.O. output rotation will need to be R.H. (clockwise) as viewed looking at output flange of P.T.O. for a L.H. Pump.

NOTE 3: Do not operate pump at speeds over 1500 R.P.M.

NOTE 4: Always disengage the P.T.O. after each operating cycle.

HOW TO IDENTIFY WHAT PUMP IS NEEDED

The optional SwapLoader factory supplied pump is a bushing style gear pump, because of the pressure requirements of the SwapLoader hooklift hoist. By design the bushing style pumps are single rotation (rotation specific).

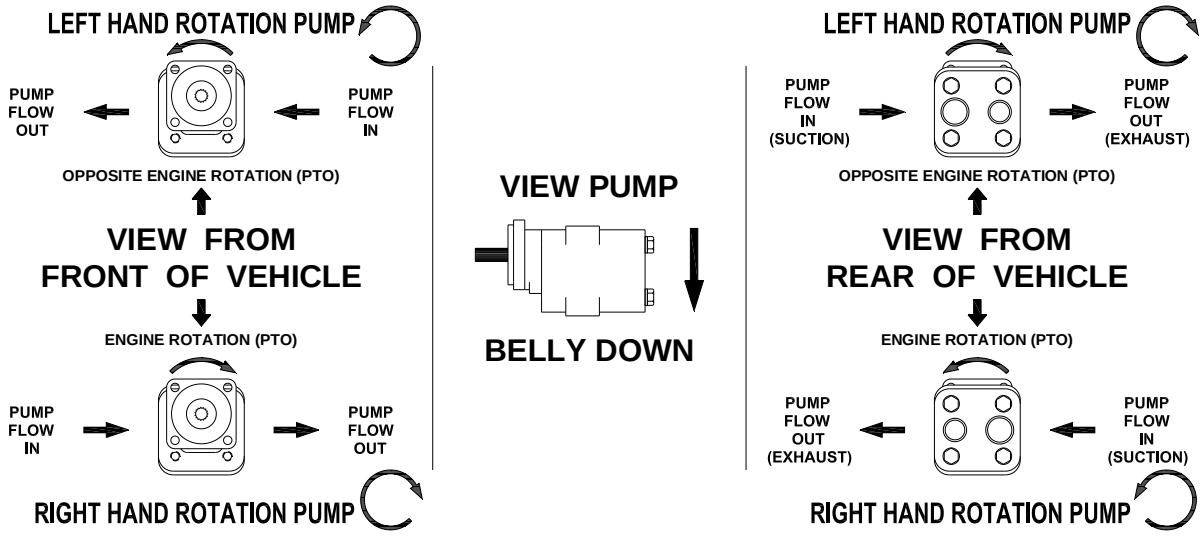
Most manual transmission applications require a CCW (left hand rotation) pump. For most automatic transmission applications a CW (right hand rotation) pump is needed; call SwapLoader for price and availability. **NOTE: Consult the PTO supplier whenever uncertain about the correct pump rotation for a particular application.**

The table below lists the SwapLoader part number for both left and right hand rotation pumps for the SL-412 hoist model:

MODEL	L.H. Rotation Pump (manual)	R.H. Rotation Pump (automatic)
SL-412	20P87	21P03

HOW TO IDENTIFY PUMP ROTATION

To better understand the effects of pump rotation we must consider the path that oil takes through the pump. Oil enters the pump through the inlet (suction) port, travels around the outside of the gears, and is forced out through the outlet (exhaust) port. Oil enters and exits the pump in the direction of its rotation.



Determine pump rotation by positioning the pump belly side down (see illustration above). Looking at the rear of the pump if the suction (largest) port is to the left side, then the pump is a CCW or left hand rotation. If the suction (largest) port is on the right side, then the pump is CW or right hand rotation.

PUMP INSTALLATION

1. Install the hydraulic pump to the P.T.O. (Bolts are not provided).

2. Install the hydraulic fittings into ports on the hydraulic pump as shown on Drawing No. 91H04.

3. Connect the suction hose assembly to the hydraulic tank (1 1/2" I.D. hose) and route to the hydraulic pump in as short and straight line as possible. Be sure to route the hose clear of exhaust components and of the drive shaft. Extra hose is provided so the hose can be shortened to an appropriate length. Install the hose on the hose barb fittings at the tank and at the pump and secure with the hose clamps provided.

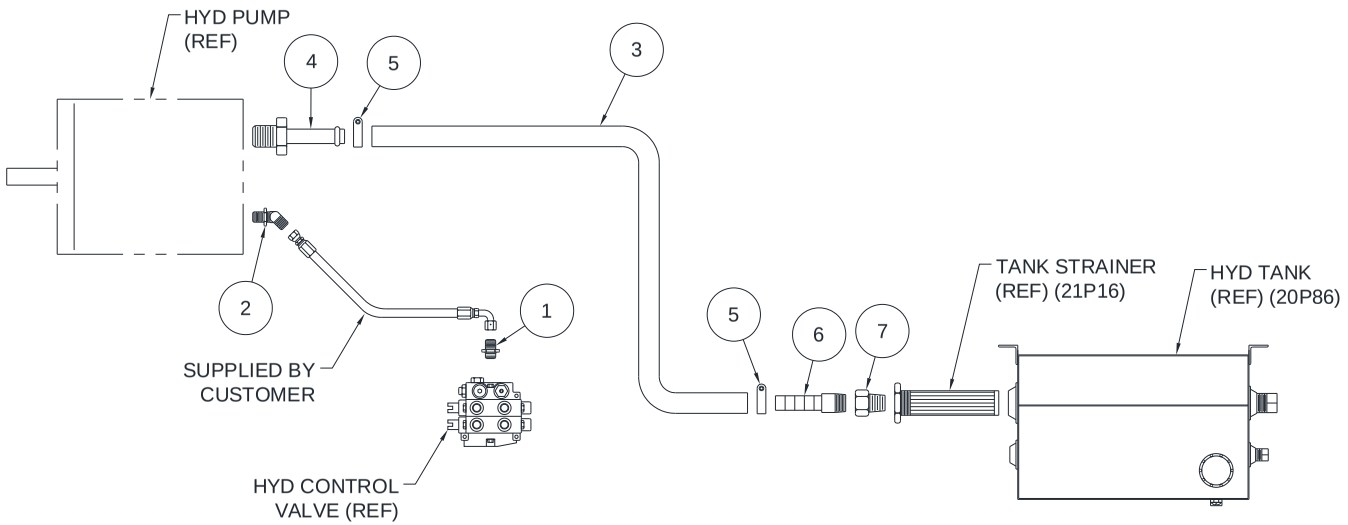
   NOTE: Prior to startup, this hose must be filled with oil.

4. The pressure hose the hydraulic pump to the control valve assembly is not supplied with the hoist as it must be made to the proper length. This hose must be purchased from a local hydraulic hose assembly supplier per the following specifications:

Hose I.D.:	3/4 inch
Working Pressure:	3500 PSI
Hose Fitting Threads:	SAE 37° (JIC) 1 1/16-12

5. Install the pressure hose as indicated. Tie up the pressure and suction hoses as necessary. Again, be sure the hoses are routed to avoid exhaust components and to stay clear of the drive shaft.

PARTS LIST					
ITEM	QTY	P/N	DESCRIPTION	WT-lb/ea	REMARKS
1	ONE	10P90	ADP, HYD MJIC / ORB	0.40	6400-12
2	ONE	10P91	ADP, HYD MJIC / ORB 45°	0.50	6802-12-16
3	ONE	11P71	HOSE 1 1/2 LP x 120	9.60	
4	ONE	11P72	ADP, HYD HOSE INS / ORB	0.60	4604-24-20
5	2	11P77	T-BOLT CLAMP, 2ø	0.15	TBC-200
6	ONE	11P95	ADP, HYD HOSE INS / MP	0.40	STC-20
7	ONE	12P48	ADP, HYD MP / FP	0.60	2 x 1 1/2
				12.40	TOTAL



SWAPLOADER™ U.S.A. LTD.

TITLE: HYD SUB-ASSY PUMP CIRCUIT

DRAWING NO.	MODEL NO.	REV
91H04	SL-330/400/406/412	

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START UP PROCEDURE

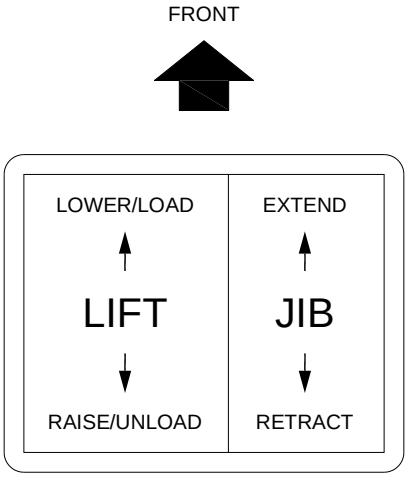
1. Fill the hydraulic tank with hydraulic oil (see oil specification in Maintenance Section.)

2. Prime the pump by loosening the clamp on the suction hose at the pump. Pull the hose back off the fitting till the air is bled from the line. Push the hose back on the fitting and retighten the clamp.

3. Engage the P.T.O. and run the pump at idle (700 to 900 RPM). Operate the cylinders at full stroke five to ten times to bleed the air from the lines and cylinders. The cylinders were filled with oil during testing at the factory, but some seepage may have occurred during shipping and installation. Refill the hydraulic tank, if needed, during this sequence and do not let the pump run without oil.

4. Check for leaks and tighten fittings as necessary.

5. Verify the movement of the control levers corresponds to the movement of the cylinders per the figure below.



6. Install all safety decals and product decals per Drawing No. 43H98 after final installation and painting have been completed.

7. Fill out pre-delivery checklist and warranty card and mail to SwapLoader U.S.A., Ltd.

NOTE: **Failure to fill out and return warranty card within 15 days of installation may possibly void the warranty.**

CAUTION: The SwapLoader hoist must be used with bodies or containers that properly fit the front hook and the rear hold-downs (See figure S288). If possible, pick up one of the containers that will actually be used with the SwapLoader hoist and verify the following:

- Outside dimensions of the long sills match the guiding rollers on the hoist.
- The front hook dimensions are correct for the hoist.
- The rear hold-downs of the container latch into the hold-downs on the hoist.
- Check for any interference between the container and any part of the hoist (i.e.: Hydraulic tank, hydraulic tubing or hose, hydraulic valve, etc.)

When the SL-412 hoist is equipped with a standard 61-3/4" fixed jib see subframe Drawing No. S-936, otherwise when equipped with the optional 61-3/4" to 53-7/8" adjustable dual height jib see subframe Drawing No.'s S-936 or S-935.

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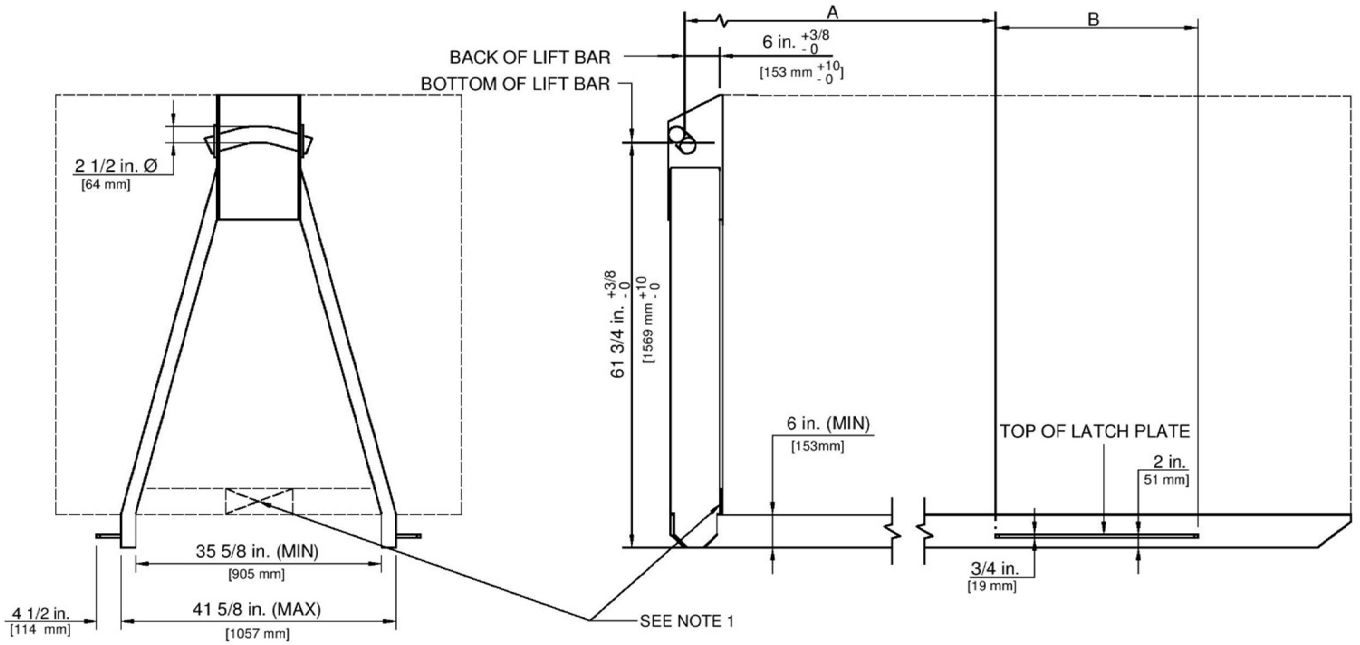
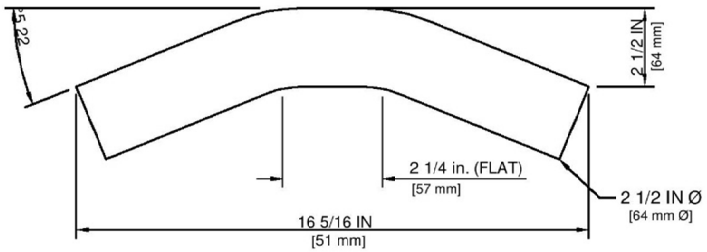
400 SERIES SUB-FRAME CRITICAL DIMENSIONS



400 SERIES SUB-FRAME DIMENSIONS		
HOIST COMPATABILITY	A	B
SL-412	111 3/4" [2838 mm]	36" [915 mm]
SL-330/400	123 1/8" [3128 mm]	36" [915 mm]
SL-405/406/545	132 1/8" [3356 mm]	48" [1220 mm]
SL-650/655	154 1/2" [3925 mm]	48" [1220 mm]



HOOK DETAIL
400 SERIES SUB-FRAMES

NOTES
1.) A STRUCTURAL JIB CONTACT POINT LOCATED AS LOW AS ALLOWABLE ON THE CONTAINER FRONT IS REQUIRED.

2.) THIS DRAWING PROVIDES THE CRITICAL SUB-FRAME DIMENSIONS FOR COMPATABILITYWITH THE SWAPLOADER HOOK LIFT HOIST. IT IS THE SUB-FRAME SUPPLIERS RESPONSIBILITY TO PROVIDE A SUB-FRAME OF SUFFICIENT CAPACITY WHICH PROPERLY SUPPORST THE BODY/CONTAINER WHEN USED WITH THE HOOK LIFT HOIST

SWAPLOADER™ U.S.A. LTD

TITLE
400 SERIES SUB-FRAMES

DRAWING NO.	MODEL NO.	REV
S-936		

S-936 12/12/2014

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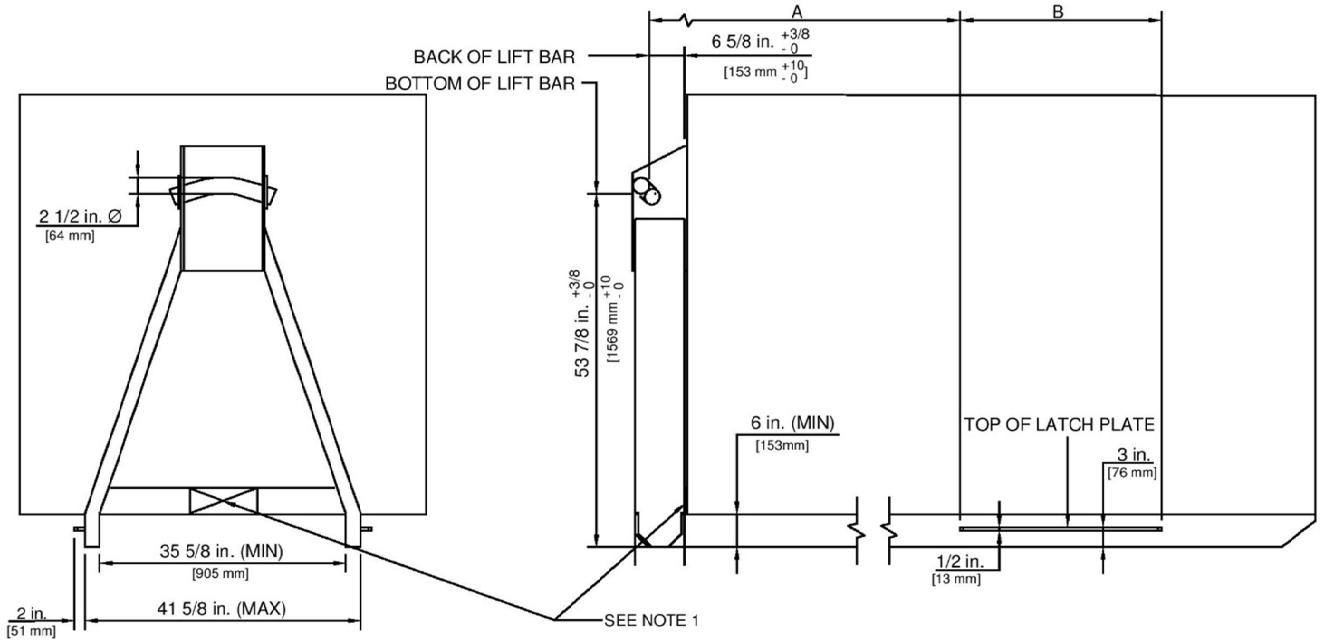
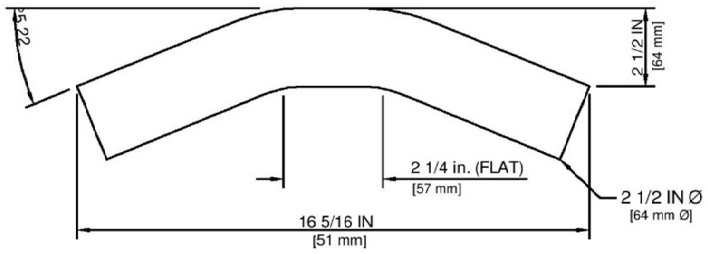
300 SERIES SUB-FRAME CRITICAL DIMENSIONS





HOOK DETAIL
400 SERIES SUB-FRAMES

300 SERIES SUB-FRAME DIMENSIONS		
HOIST COMPATABILITY	A	B
SL-240/330/400/412	111 3/4" [2838 mm]	36" [915 mm]
SL-220/222/406	123 3/4" [3143 mm]	48" [1219 mm]

NOTES
1.) A STRUCTURAL JIB CONTACT POINT LOCATED AS LOW AS ALLOWABLE ON THE CONTAINER FRONT IS REQUIRED.

2.) THIS DRAWING PROVIDES THE CRITICAL SUB-FRAME DIMENSIONS FOR COMPATABILITYWITH THE SWAPLOADER HOOK LIFT HOIST. IT IS THE SUB-FRAME SUPPLIERS RESPONSIBILITY TO PROVIDE A SUB-FRAME OF SUFFICIENT CAPACITY WHICH PROPERLY SUPPORST THE BODY/CONTAINER WHEN USED WITH THE HOOK LIFT HOIST

SWAPLOADER™ U.S.A. LTD

TITLE: 300 SERIES SUB-FRAMES

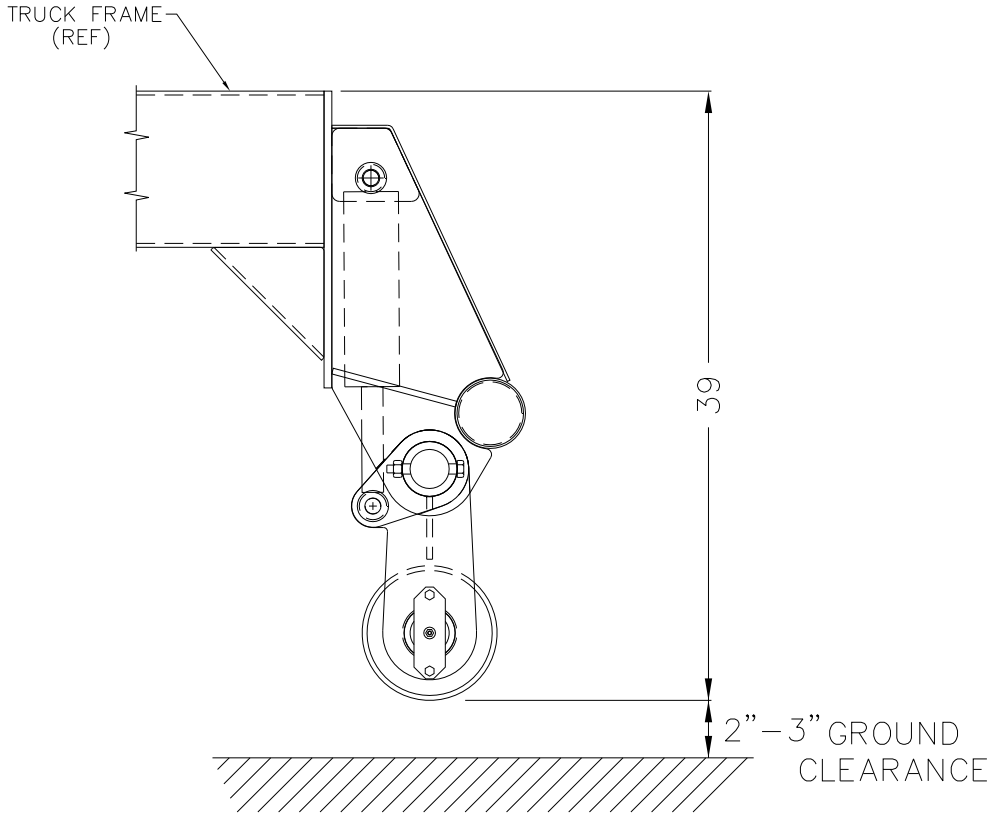
DRAWING NO.	MODEL NO.	REV
S-935		

S-935 12/12/2014

STABILIZER INSTALLATION (OPTION)

1. The hoist installation for a unit with the stabilizer option is much the same as that for the standard unit except that a three section hydraulic control valve is used. (See Drawing No. 90H68 for Manual Control or Drawing No. 90H69 for Air Controls for the correct installation and plumbing diagrams for a hoist with three control circuits in the Option section of the Parts List pages of the manual).

2. The following diagram gives the approximate position of the stabilizer roller from the top of the truck chassis frame rail with the mounts as provided by SwapLoader. When extended down, the roller should touch the ground only when the vehicle is loading a heavy container. Therefore, with the truck empty, leave 2 to 3 inches of clearance between the ground and the roller.



Also, you will need to check that when the roller is up in the transport position it does not interfere with any part of the rear axle, rear suspension, or brake components. If some interference will occur, you may slant the stabilizer mounting back from the vertical position until you leave sufficient clearance. This can be achieved by cutting the truck chassis frame rails off at an angle before installing the stabilizer mounts. Do not slant the mounting more than eight degrees (about a 14:2 pitch).

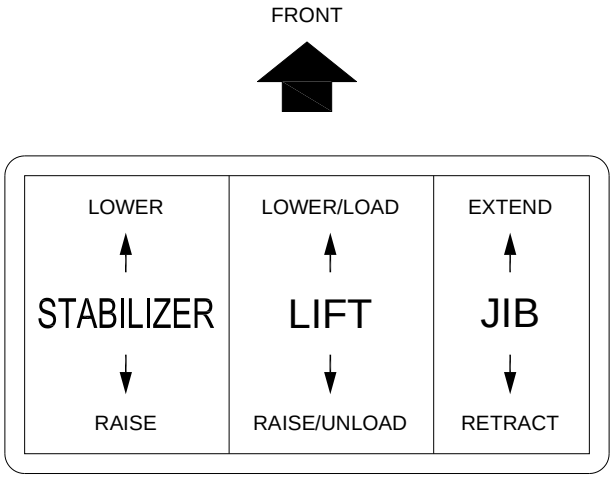
3. Once the required position of the stabilizer has been determined, install as shown on drawing 42H62 in the Options section of the hoist manual. [*Field weld locations and size requirements are also indicated on drawing 42H62 in the Options section of the hoist manual.*]

Note: Prior to any welding, consult the truck manufacturer for any special precautions that may need to be taken. Typically the batteries must be disconnected and the ground lead from the welder should be connected as close as possible to the part being welded to avoid the possibility of arching across bearings, gears, etc.

Note: The hoist mainframe is made from high strength low alloy steel. Use an appropriate welding process.

4. Install the hydraulic adapters and hoses from the three section hydraulic control valve to the hydraulic cylinder (Pt. No. 21P84) shown on drawings 42H62 & 90H83 in the Option section of the manual. Tie up all loose hoses as required. Be sure the hoses are routed to avoid exhaust components and all moving components of the rear axles.

5. After the start procedure has been completed on the hoist, verify that the movement of each control lever corresponds to the movement of the cylinders per the figure below.



Operate the stabilizer through 5 to 8 cycles to remove the air from the hydraulic cylinders and lines.

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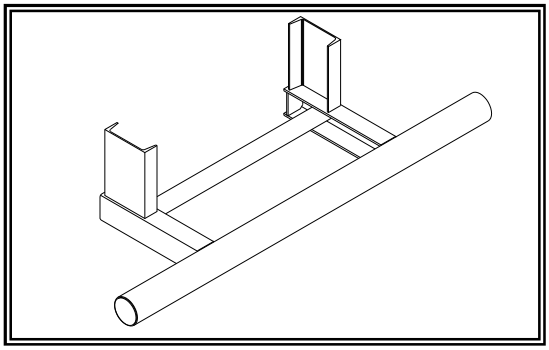

REAR BUMPER ASSEMBLY

(52H11)

INSTALLATION INSTRUCTIONS

1. Review all directions and diagrams provided before starting bumper installation.

2. Trim truck frame to indicated dimensions (See Fig. 1). These dimensions will facilitate the mounting of the rear light assembly if it is also being mounted.

3. Measure the distance from the top of the truck frame to the ground (NOTE: This should be performed on a level surface). Based on this measurement and the dimensions in Fig. 1, the vertical channel [P/N: 63H94] may need to be modified in length to meet the Office of Motor Carrier Safety (OMCS) regulations. Regulation 393.86 requires that no bumper be located more than 30" off the ground when the truck is empty, and the end of the bumper should not be located more than 24" from the extreme rear of the vehicle, including truck bodies (See Fig. 2). Once the length has been determined for the vertical channels, weld them to the bottom of the truck frame (See additional notes on next page).

4. Center the bumper weldment [P/N: 52H12] on the vertical channels [P/N: 63H94]. Position rear of bumper from rear of the hoist as indicated by the bumper location chart. This is crucial in order to ensure that the container longsills do not contact the bumper during the dump cycle (See Fig. 1 & 2).

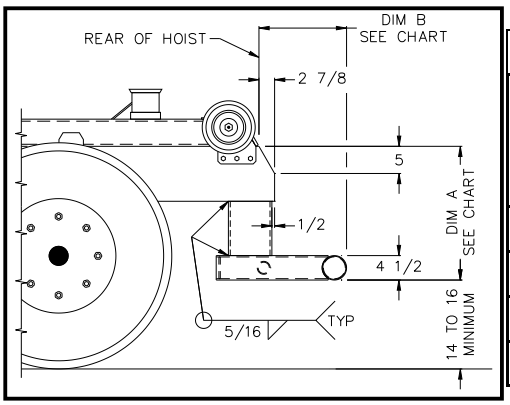

FIG. 1

BUMPER LOCATION CHART

DIM. A	DIM B. (Max)								
	SL-105	SL-145	SL-180 & SL-185	SL-220/222 & SL-240	SL-2418	SL-330 & SL-400	SL-412	SL-406 & SL-505/545	SL-650
24 5/8"	13 1/2	15 3/4	15 1/4	17	14 1/4	14	13 1/2	16 1/2	18
22 5/8"	12 1/4	14 1/2	14	15 3/4	13	12 3/4	12	15	
20 5/8"	11	13	12 3/4	14 1/4	11 3/4				
18 5/8"	9 3/4	11 3/4	11 1/2						

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02/08/11

REAR BUMPER ASSEMBLY
(52H11)

INSTALLATION INSTRUCTIONS (continued)

5. Weld the bumper weldment to the vertical channels (See Fig. 1 & 3).

ADDITIONAL NOTES:

1. Prior to any welding, consult the truck manufacture for any special precautions that may need to be taken. Typically the batteries must be disconnected and the ground lead from the welder should be as close to the part being welded to avoid the possibility of arcing across bearings, gears, etc.
2. All welds should be done utilizing a low hydrogen welding process.

MATERIAL LIST

ITEM	QTY	P/N	DESCRIPTION	WT lb. PER EA.
1	1	52H12	REAR BUMPER WDMT	95.66
2	2	63H94	VERTICAL CHANNEL	9.58
			TOTAL	114.82

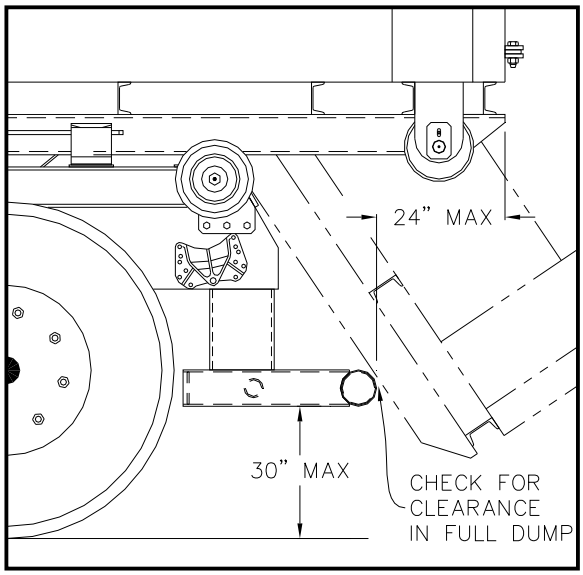

FIG. 2

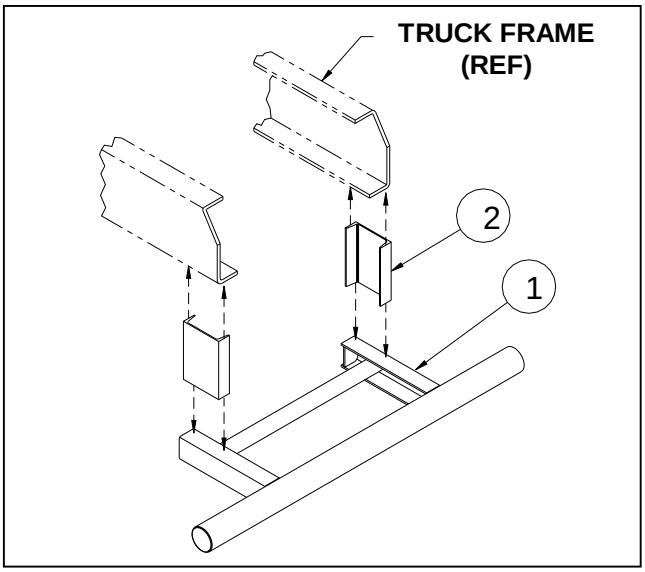

FIG. 3

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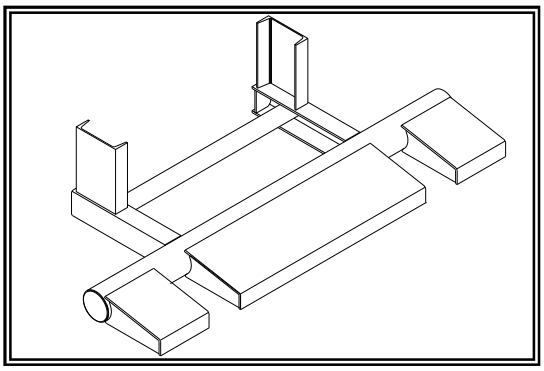

REAR BUMPER ASS'Y w/ EXTENSIONS

(52H11 with 52H13 Extensions)

INSTALLATION INSTRUCTIONS

1. Review all directions and diagrams provided before starting bumper installation.

2. Trim truck frame to indicated dimensions (See Fig. 1). These dimensions will facilitate the mounting of the rear light assembly if it is also being mounted.

3. Measure the distance from the bottom of the truck frame to the ground (NOTE: This should be performed on a level surface). Based this measurement and the dimensions in Fig. 1, the vertical channel [P/N: 63H94] may need to be modified in length to meet the Office of Motor Carrier Safety (OMCS) regulations. Regulation 393.86 requires that no bumper be located more than 30" off the ground when the truck is empty, and the end of the bumper should not be located more than 24" from the extreme rear of the vehicle, including truck bodies (See Fig. 2). Once the length has been determined for the vertical channels, weld them to the truck frame (See additional notes on next page).

4. Center the bumper weldment [P/N: 52H12] with factory installed extensions [P/N: 52H13] on the vertical channels [P/N: 63H94]. Position rear of bumper from rear of the hoist as indicated by the bumper location chart. This is crucial in order to ensure that the container longsills do not contact the bumper during the dump cycle (See Fig. 1 & 2).

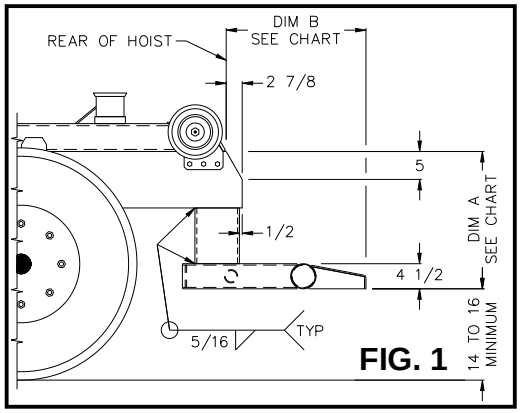

FIG. 1

BUMPER LOCATION CHART									
DIM. A	DIM B. (Max)								
	SL-105	SL-145	SL-180 & SL-185	SL-220/222 & SL-240	SL-2418	SL-330 & SL-400	SL-412	SL-406 & SL-505/545	SL-650
24 5/8"	19 3/4	22 1/2	21 3/4	25 1/4	21 3/4	21 1/2 *	21 1/4 *	24 1/4 *	27
22 5/8"	18 1/2	21	20 1/2	23 3/4	20 1/2	20 *	19 ¾ *	22 3/4 *	
20 5/8"	17 1/4	19 1/2	19 1/4	22 1/4	19 1/4				
18 5/8"	16	18 1/4	18						

* Dimensions assume 6" tall longsills. For 8" tall longsills add 2 ¼" to the dimension shown.

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11/24/14

REAR BUMPER ASS'Y w/ EXTENSIONS
(52H11 with 52H13 Extensions)

INSTALLATION INSTRUCTIONS (continued)

5. Weld the bumper weldment to the vertical channels (See Fig. 1 & 3).

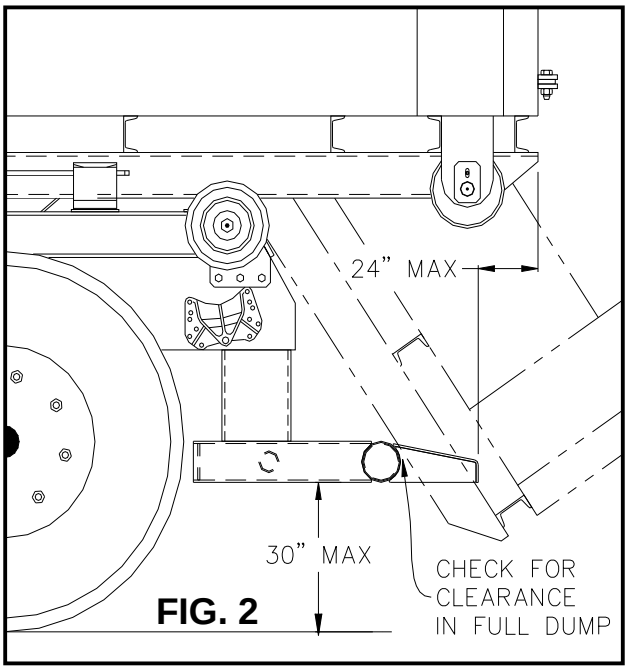

FIG. 2

ADDITIONAL NOTES:

1. Prior to any welding, consult the truck manufacture for any special precautions that may need to be taken. Typically the batteries must be disconnected and the ground lead from the welder should be as close to the part being welded to avoid the possibility of arcing across bearings, gears, etc.

2. All welds should be done utilizing a low hydrogen welding process.

MATERIAL LIST				
ITEM	QTY	P/N	DESCRIPTION	WT lb. PER EA.
1	1	52H12	REAR BUMPER WDMT	95.66
2	2	63H94	VERTICAL CHANNEL	9.58
3	1	52H13	REAR BUMPER EXTENSIONS	58.42
			TOTAL	173.24

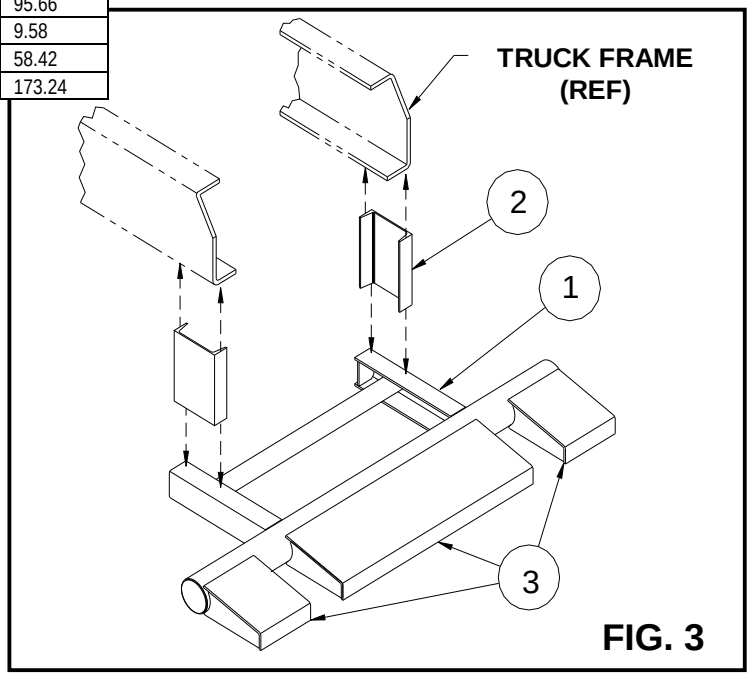

FIG. 3

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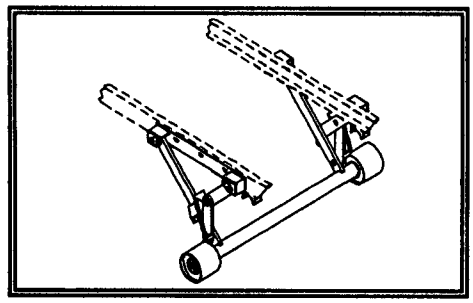

BUMPER ASSEMBLY, DROP DOWN
(51H11)

INSTALLATION INSTRUCTIONS

1. Review all directions and diagrams provided before starting bumper installation. Typically, a drop down bumper is needed when the rear of the container extends beyond the back of the truck such that the distance between the truck bumper and container rear exceeds 24" (See Fig. 1).Office of Motor Carrier Safety (OMCS) Regulation 393.86 requires that no bumper be located more than 30" off the ground when the truck is empty, and the end of the bumper should not be located more than 24" from the extreme rear of the vehicle, including truck bodies (See Fig. 1).

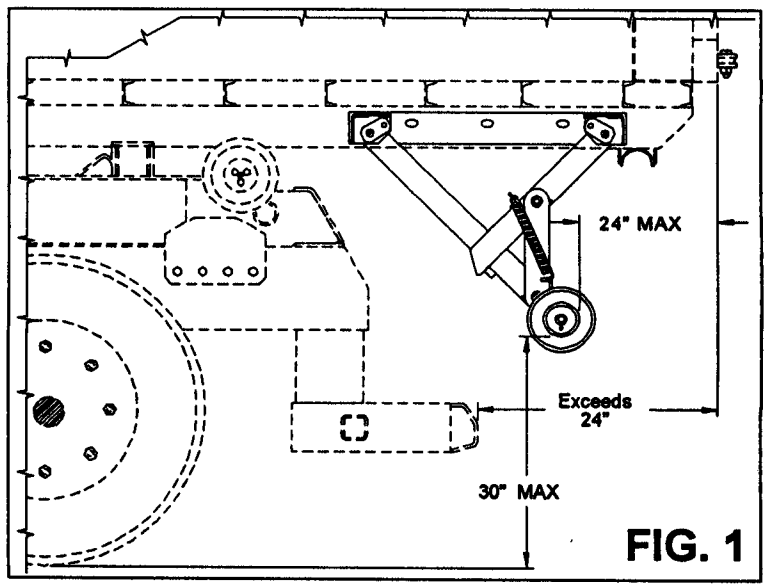

FIG. 1

BUMPER ASSEMBLY, DROP DOWN
(51H11)

INSTALLATION INSTRUCTIONS (continued)

2. Position drop down bumper on the longsills of the sub-frame (See Fig. 2 & 3). The mount brackets [Part No. 51H17] need to be positioned correctly to allow for sufficient room for bumper cradles [Part No. 51H19] (See Fig.2). Weld mount brackets onto the longsills of the sub-frame.

3. Position bumper cradles [Part No. 51H19] on the longsills of the sub-frame. Check bumper cradles for squareness with respect to each other. The bumper tube [Part No.51H16] should come to rest within the bumper cradles when the container rests on the ground (See Fig. 2 & 3). Weld bumper cradles into place on longsills.

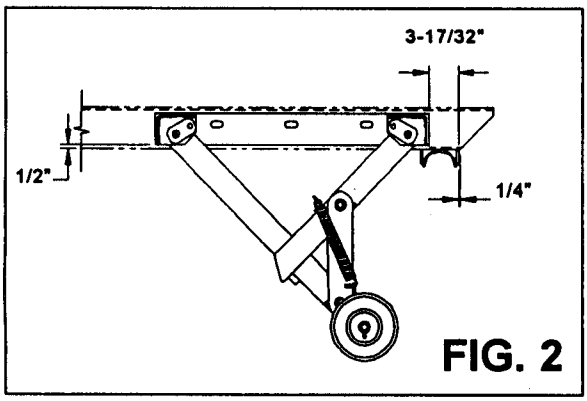

FIG. 2

ADDITIONAL NOTES:

1. Prior to any welding, consult the truck manufacturer for any special precautions that may need to be taken. Typically the batteries must be disconnected and the ground lead from the welder should be connected as close as possible to the part being welded to avoid the possibility of arcing across bearings, gears, etc.

2. During installation of the bumper, check to make sure that the position of the bumper does not interfere with the loading and unloading of truck bodies.

MATERIAL LIST

ITEM	QTY	P/N	DESCRIPTION	WT lb. PER EA.
1	1	51H12	LONG PIVOT ARM R.H.	16.08
2	1	51H13	LONG PIVOT ARM L.H.	16.08
3	1	51H14	SHORT PIVOT ARM R.H.	8.89
4	1	51H15	SHORT PIVOT ARM L.H.	8.89
5	1	51H16	BUMPER TUBE	113.05
6	2	51H17	MOUNT BRACKET	19.94
7	4	51H18	BUMPER PIN	1.12
8	2	51H19	BUMPER CRADLE	1.64
9	2	51H20	BUMPER ROLLER	27.07
10	6	01P06	3/4-10 SLOTTED HEX NUT	.22
11	6	00786	3/4 DIA. FLAT WASHER HT	.10
12	6	00P98	5/32 DIA. X 1-1/2 COTTER PIN	.01
13	4	00P03	3/8-16 X 3/4 HHCS	.11
14	4	00755	3/8 DIA. LOCK WASHER	.05
15	10	90P20	1/4-28 GREASE ZERK	.01
16	2	90P33	1-1/8 OD X 10 SPRING	.60
			TOTAL	268.69

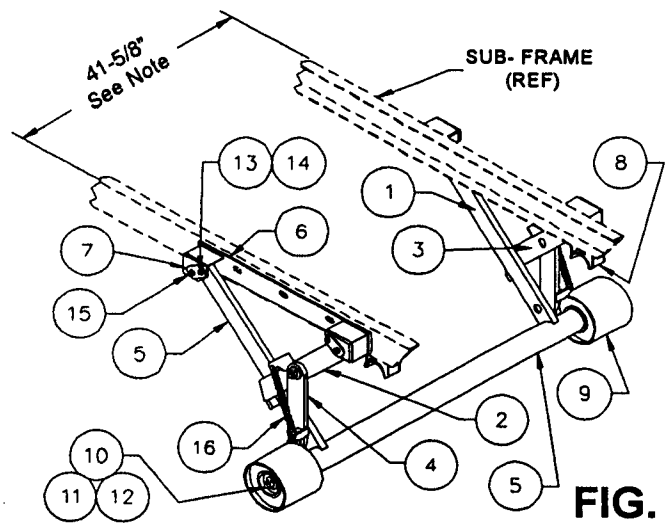

FIG. 3

Note: If width of the Longsills is under 41-5/8", add shims under the 51H17 brackets to get the dimension.

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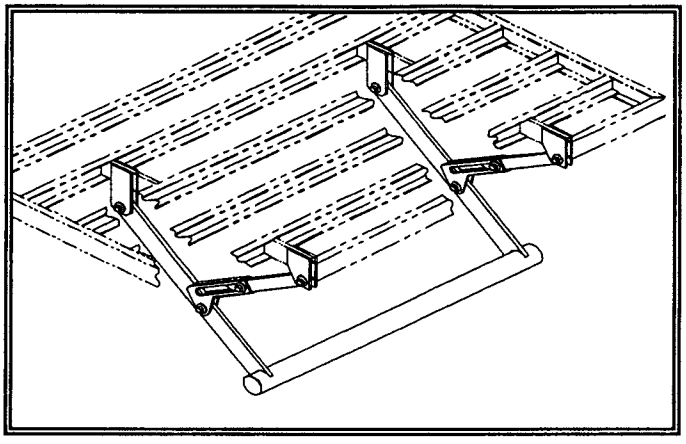


FOLDING BUMPER
(51H44)

FOLDING BUMPER
(51H44)

INSTALLATION INSTRUCTIONS

1. Review all directions and diagrams provided before starting bumper installation. Typically, a folding bumper is needed when the rear of the container extends beyond the back of the truck such that the distance between the truck bumper and container rear exceeds 24" (See Fig. 1). Office of Motor Carrier Safety (OMCS) Regulation 393.86 requires that no bumper be located more than 30" off the ground when the truck is empty, and the end of the bumper should not be located more than 24" from the extreme rear of the vehicle, including truck bodies (See Fig. 1). The folding bumper will need to be used in conjunction with the Roller Assembly [10H90] and Roller Mount Brackets Assembly [10H91] for the container to function properly.

2. Locate the best position for the support bars between the cross members. Fabricate four support bars out of 4" x 1" bar cut to the length needed to fit between the cross members (See Fig. 3). Figure 3 shows a width dimension of 56-1/2". This width can be adjusted if interference occurs with other items on the container, but cannot exceed the width of the bumper tube. Weld the four bars between the cross members.

3. Weld the front [62H87] and rear [62H88] brackets to the support bars. Be sure to maintain the dimensions as indicated so that the bumper folds properly (See Fig. 2 & 3).

4. Weld the Pivot arms [62H84] to the Bumper Tube Weldment [51H46]. Be sure to maintain the width dimension that was used to locate the support bars in Step 2.

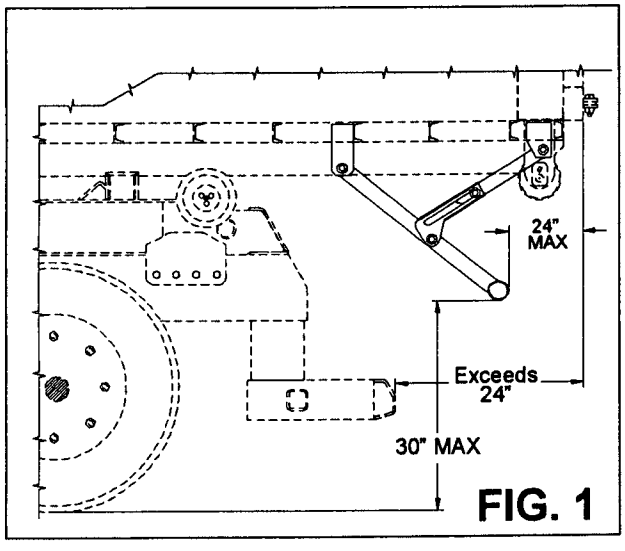


FIG. 1

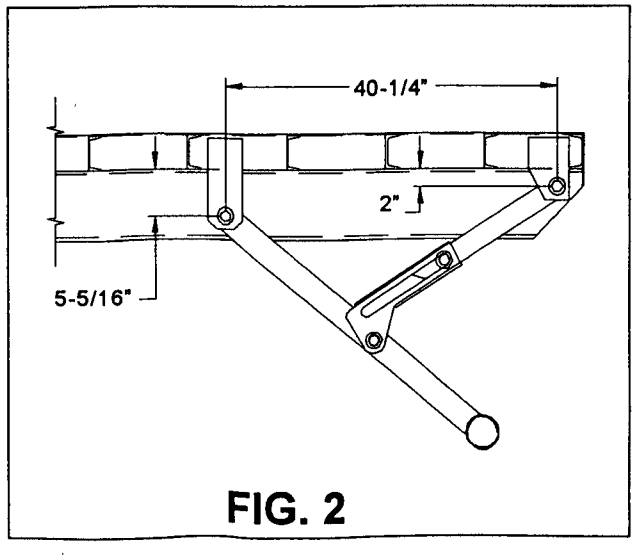


FIG. 2

5. Assemble the Bumper Assembly to the Front and Rear Brackets (See Fig. 3). Refer to the Typical Bolted Connection (See Fig. 4) for all connections.

6. Raise the bumper into the folded position several times to ensure the mechanism works smoothly and freely.

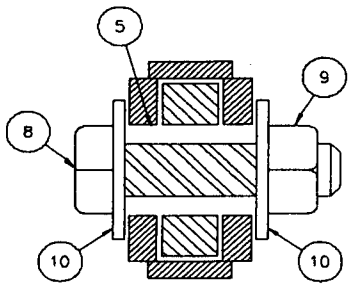
MATERIAL LIST

ITEM	QTY	P/N	DESCRIPTION	WT lb. PER EA.
1	2	51H45	SLIP BRACKET WDMT.	9.17
2	1	51H46	BUMPER TUBE WDMT.	47.83
3	2	62H84	PIVOT ARM	24.79
4	2	62H85	SLIDE ARM	10.67
5	8	62H86	BUSHING	.39
6	4	62H87	FRONT BRACKET	4.45
7	4	62H88	REAR BRACKET	3.16
8	8	01P15	3/4-10 X 3 HHCS GR-8	.56
9	8	00P72	3/4-10 LOCKING HEX NUT	.20
10	16	00774	3/4 DIA. FLAT WASHER	.05
			TOTAL	177.53

ADDITIONAL NOTES:

1. Prior to any welding, consult the truck manufacturer for any special precautions that may need to be taken. Typically the batteries must disconnected and the ground lead from the welder should be connected as close as possible to the part being welded to avoid the possibility of arcing across bearings, gears, etc.

2. During installation of the bumper, check to make sure that the position of the bumper does not interfere with the loading and unloading of truck bodies.



TYPICAL BOLTED CONNECTION

FIG. 4

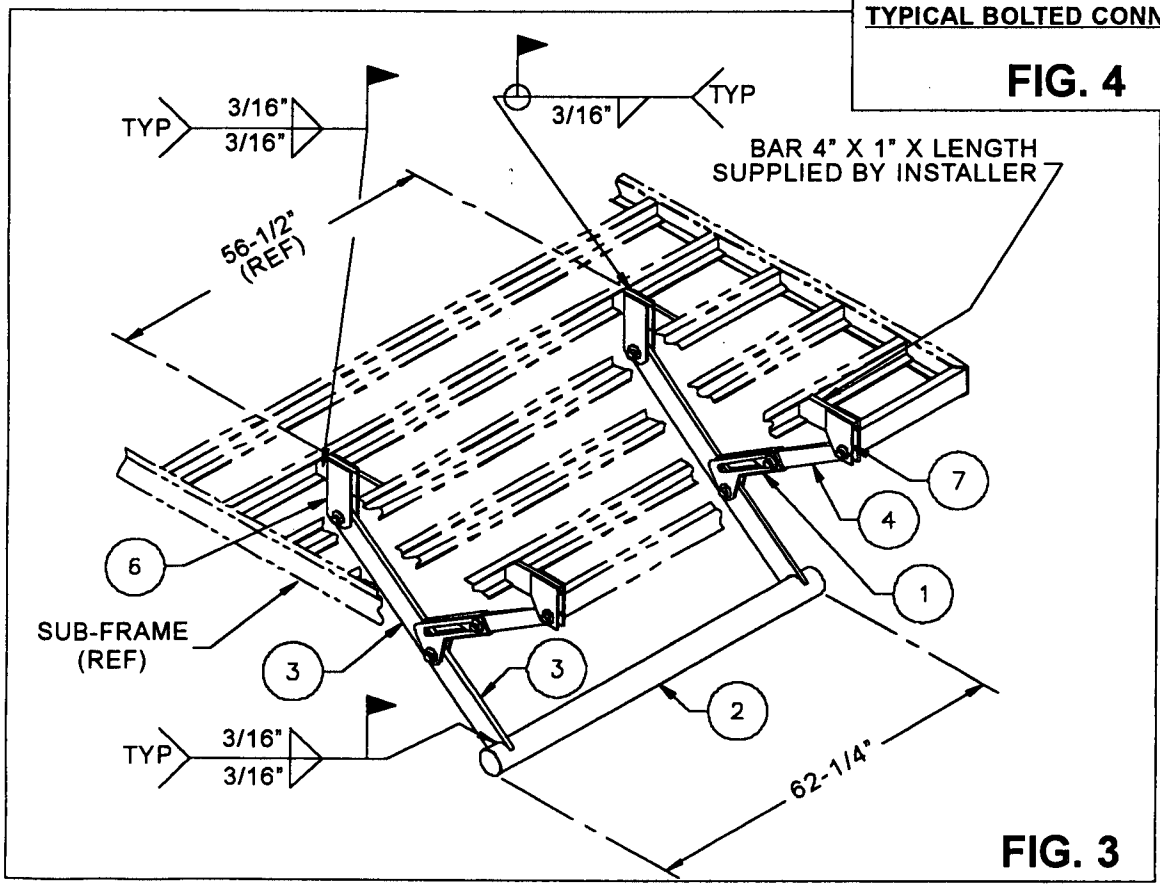


FIG. 3

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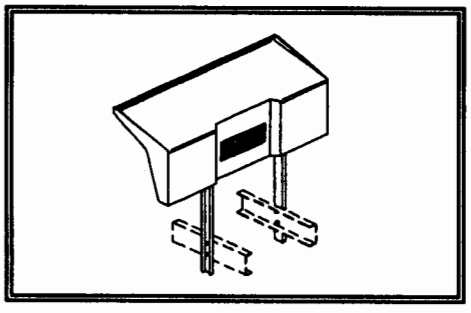

CAB GUARD ASSEMBLY

(50H99)

INSTALLATION INSTRUCTIONS

1. Review all directions and diagrams provided before starting cab guard installation.
2. Position cab guard weldment [Part No. 50H95] on frame with sufficient clearance between cab and cab guard (See Fig.1).
3. Determine location for mounting holes. Mounting holes should not be located within 2-3/8" of the truck frame edge (See Fig. 1). Drill 21/32" dia. mount holes through cab guard channels.

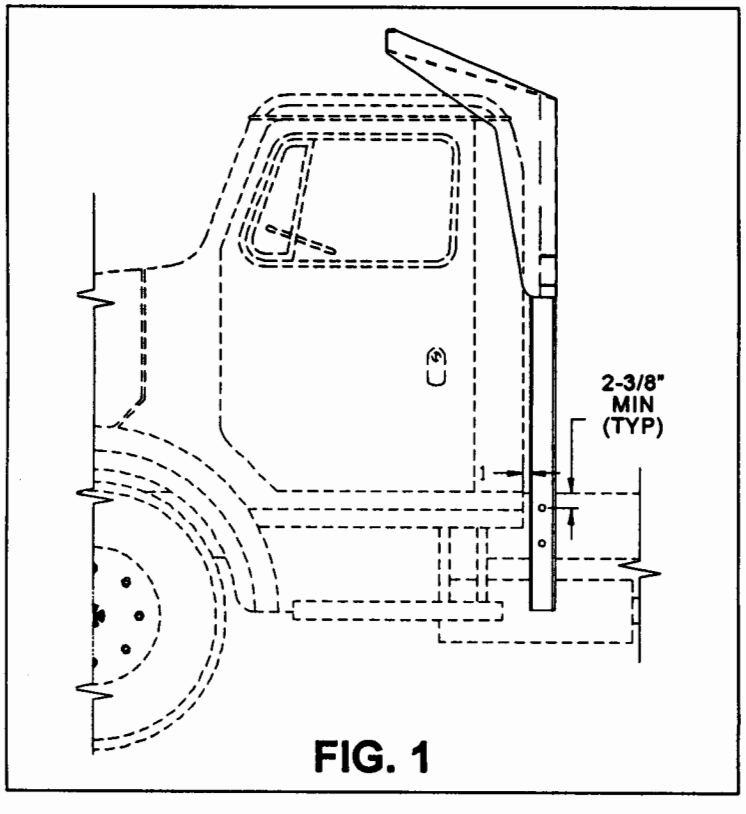

FIG. 1

CAB GUARD ASSEMBLY
(50H99)

INSTALLATION INSTRUCTIONS (continued)

4. Mark mounting holes through the cab guard weldment onto truck frame. Remove cab guard weldment and drill 21/32" dia. holes in truck frame.

5. Attach cab guard weldment to truck frame using fasteners provided (See Fig. 2).

MATERIAL LIST

ITEM	QTY	P/N	DESCRIPTION	WT lb. PER EA.
1	1	50H95	CAB GUARD WDMT.	295.36
2	4	00P69	5/8-11 X 2 HHCS	.33
3	4	00P55	5/8-11 LOCKING HEX NUT	.18
4	4	00785	5/8 DIA. WASHER HT.	.08
			TOTAL	292.72

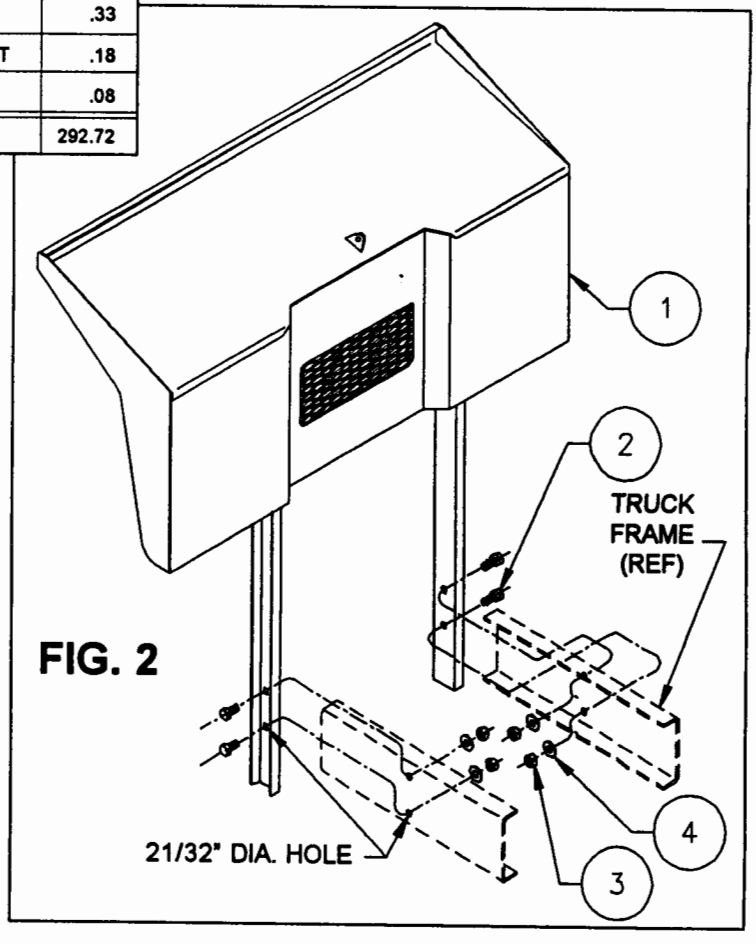

FIG. 2

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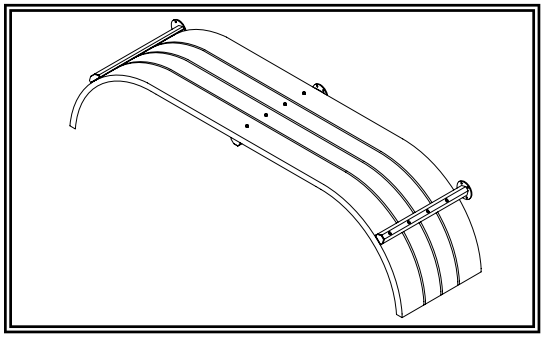


FENDER ASSEMBLY, TANDEM AXLE

Steel (11H14)

INSTALLATION INSTRUCTIONS

1. **Review all directions and diagrams provided before starting fender installation.**

2. **Center fender above tire using block to maintain the proper height. Fender should be approximately 6” above tire to allow for suspension movement (See Fig. 1). A maximum width of 48” from center of the truck to the outside edge of the fender should be maintained (See Fig. 2).**

3. **Place fender bracket weldments [Part No. 10H74] on fender. Position the brackets to avoid any mounting obstacles on hoist and/or truck chassis.**

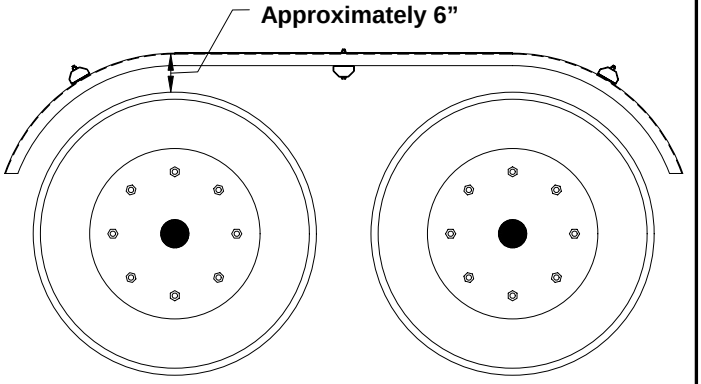


FIG. 1

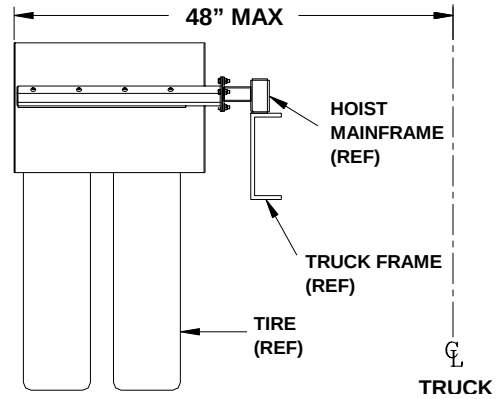


FIG. 2

All Figures are for Illustration Purposes Only

10/05/09

FENDER ASSEMBLY, TANDEM AXLE

Steel (11H14)

INSTALLATION INSTRUCTIONS (continued)

4. Mark mounting holes through the fender bracket weldment onto the fender. Remove the bracket and drill 7/16" dia. Holes in fender (See FIG. 3).

5. Attach fender bracket weldments to fender using fasteners provided.

6. Weld mounting plates [Part No. 21H37] to fender tubes [Part No. 21H61].

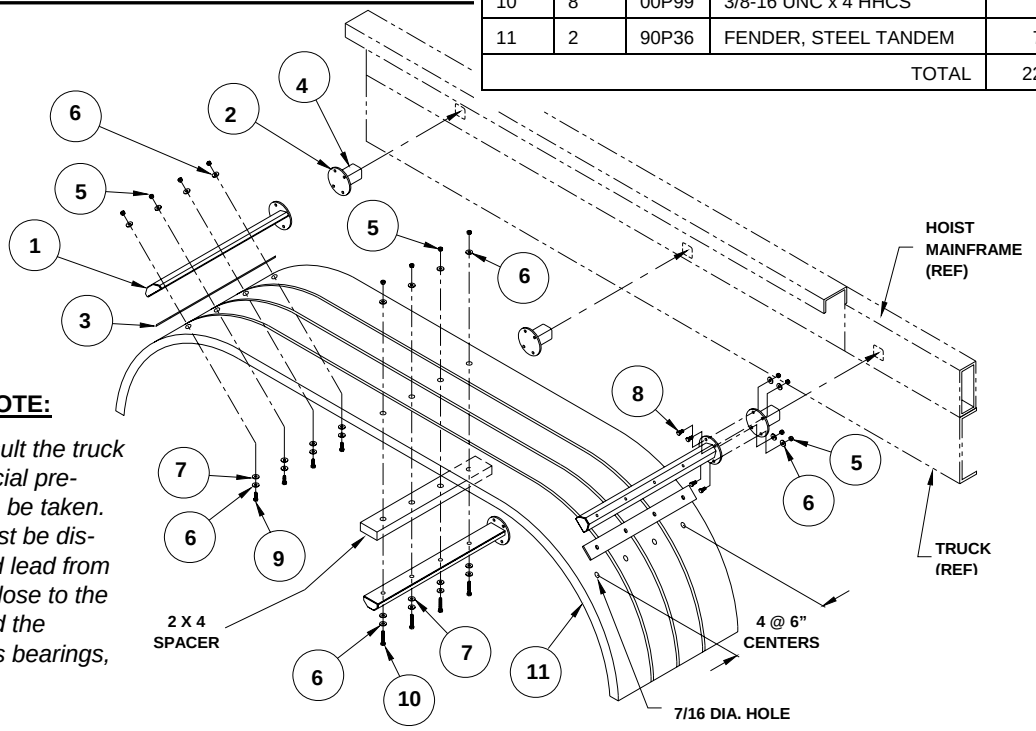
7. Position fender tubes with mount plates on hoist mainframe; align with fender bracket weldments. (NOTE: Fender tube length may need to be modified to fit specific application.)

8. Weld fender tubes to hoist mainframe. If attaching the fender tubes to the truck chassis, an additional mount plate may need to be fabricated so the assembly can be bolted to the truck chassis.

9. Attach fender bracket weldment [Part No. 10H74] to mounting plate [Part No. 21H37] using fasteners provided (See FIG. 3).

MATERIAL LIST

ITEM	QTY	P/N	DESCRIPTION	WT lb. PER EA.
1	6	10H74	FENDER BRACKET WDMT.	8.05
2	6	21H37	MOUNTING PLATE	1.09
3	6	21H42	RUBBER SPACER	.85
4	6	21H61	FENDER TUBE	1.26
5	48	00P34	3/8-16 UNC LOCKING NUT	.02
6	72	00771	3/8 DIA. FLAT WASHER	.05
7	24	00P78	3/8 DIA. NYLON WASHER	-
8	24	00P44	3/8-16 UNC X 1-1/2 HHCS	.07
9	16	01P21	3/8-16 UNC X 2-1/2 HHCS	.09
10	8	00P99	3/8-16 UNC x 4 HHCS	.11
11	2	90P36	FENDER, STEEL TANDEM	77.00
			TOTAL	228.86



ADDITIONAL NOTE:

Prior to any welding, consult the truck manufacturer for any special precautions that may need to be taken. Typically the batteries must be disconnected and the ground lead from the welder should be as close to the part being welded to avoid the possibility of arcing across bearings, gears, etc.

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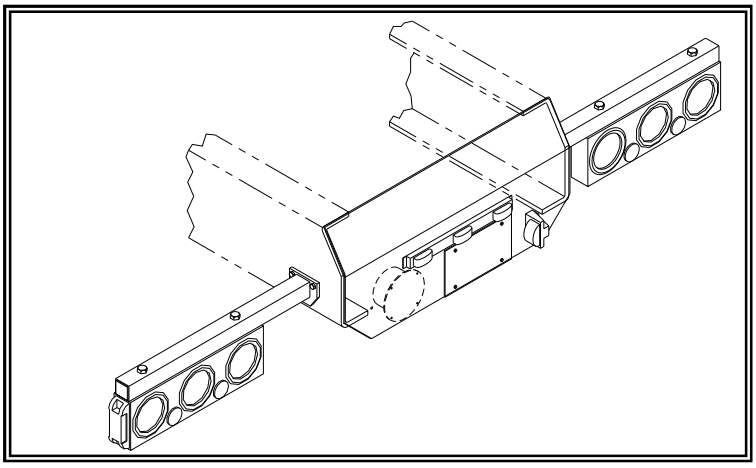

REAR LIGHT BAR ASSEMBLY

(LED-LB)

1/5/15

REAR LIGHT BAR ASSEMBLY
(LED-LB)

INSTALLATION INSTRUCTIONS

1. Review all directions and diagrams provided before starting rear light bar installation.

2. Trim truck frame to indicated dimensions (See Fig. 1). This step may have already been preformed if a bumper was previously installed.

3. Position center plate [Part No. 63H08] on the rear of the main frame. Weld center plate to truck frame (See Fig. 2 & Additional Notes).

4. Position stub light bar weldment [Part No. 51H69] on truck frame. Stub light bar weldment should be as high and as far back as possible on the truck frame to avoid interference with the bumper and fenders. It may be necessary to modify the stub light bar weldment to avoid interference. Drill mounting holes as required and mount using fasteners provided (See Fig. 3).

5. Attach the tail light module to the stub light bar weldments with the fasteners provided (See Fig 3).

6. Mount the identification light bar at top center of the center plate [Part No. 63H08] using the fasteners provided (See Fig. 3).

7. Mount license lamp right of the license plate (See Fig. 2) using the fasteners provided (See Fig. 3).

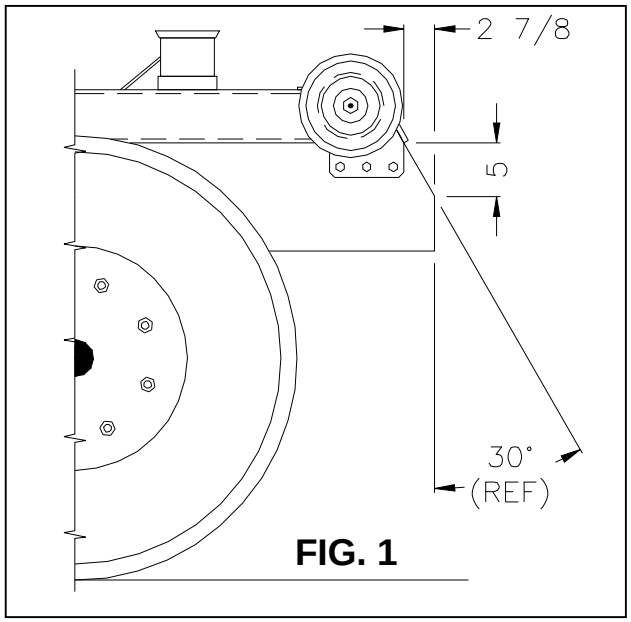

FIG. 1

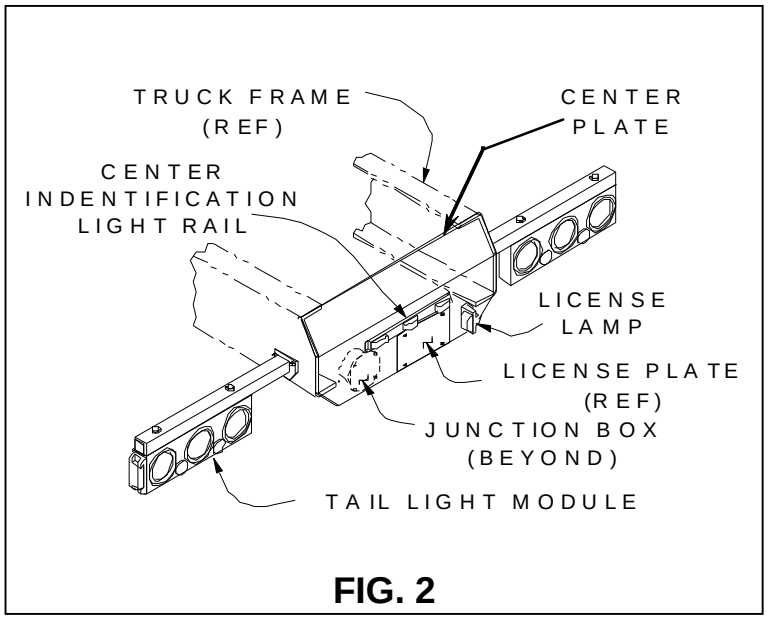

FIG. 2

All Figures are for Illustration Purposes <u>Only</u>

1/5/15

REAR LIGHT BAR ASSEMBLY
(LED-LB)

8. Mount junction box on the back left side of center plate (See Fig. 2), using the fasteners provided (See Fig. 3).

9. Route all wire harnesses into the junction box. Wire harnesses must enter the junction box through a compression fitting (Based on the size of the wire harness, choose a compression fitting with an appropriately sized grommet). Make wiring connections in junction box with wire harness from truck cab as indicated on wiring diagram (See Fig.4).

MATERIAL LIST

ITEM	QTY.	P/N	DESCR.	WT.– lb. PER EACH
1	2	51H69	STUB LIGHT BAR WDMT.	8.54
2	ONE	63H08	CENTER PLATE	27.33
3	6	00P44	3/8–16 x 1 1/2 HHCS	0.07
4	6	00P34	3/8–16 LOCKING HEX NUT	0.02
5	6	00771	3/8 DIA FLAT WASHER	0.01
6	4	01P18	5/8–11 x 3 HHCS	0.35
7	8	00P81	#8–32 x 1 RND HD SCR	–
8	8	00P82	#8–32 HEX NUT	–
9	8	00P83	#8 LOCK WASHER	–
10	ONE	40P39	LIGHT KIT ASSEMBLY	23.00
11	REF	40P41	LEFT TAIL LIGHT MODULE WITH HARNESS	–
12	REF	40P40	RIGHT TAIL LIGHT MODULE WITH HARNESS	–
13	REF	40P42	SIDE MARKER LAMP	–
14	REF	40P43	STOP, TURN, & TAIL LAMP	–
15	REF	40P45	BACK–UP LAMP	–
16	REF	40P32	LICENSE LAMP ASSEMBLY (WITHOUT HARNESS)	–
17	REF	40P44	LICENSE LAMP	–
18	REF	40P34	LICENSE LAMP HARNESS	–
19	REF	40P35	IDENTIFICATION LIGHT BAR RAIL	–
20	REF	40P46	ID LIGHT BAR LAMP	–
21	REF	40P37	ID LIGHT BAR HARNESS	–
22	REF	40P38	JUNCTION BOX ASSEMBLY	–
			TOTAL	68.74

ADDITIONAL NOTES:

Prior to any welding, consult the truck manufacture for any special precautions that may need to be taken. Typically the batteries must be disconnected and the ground lead from the welder should be as close to the part being welded to avoid the possibility of arcing across bearings, gears, etc.

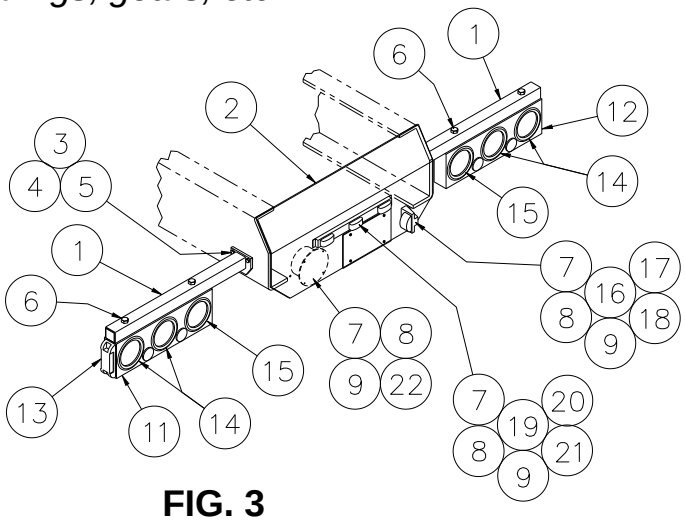

FIG. 3

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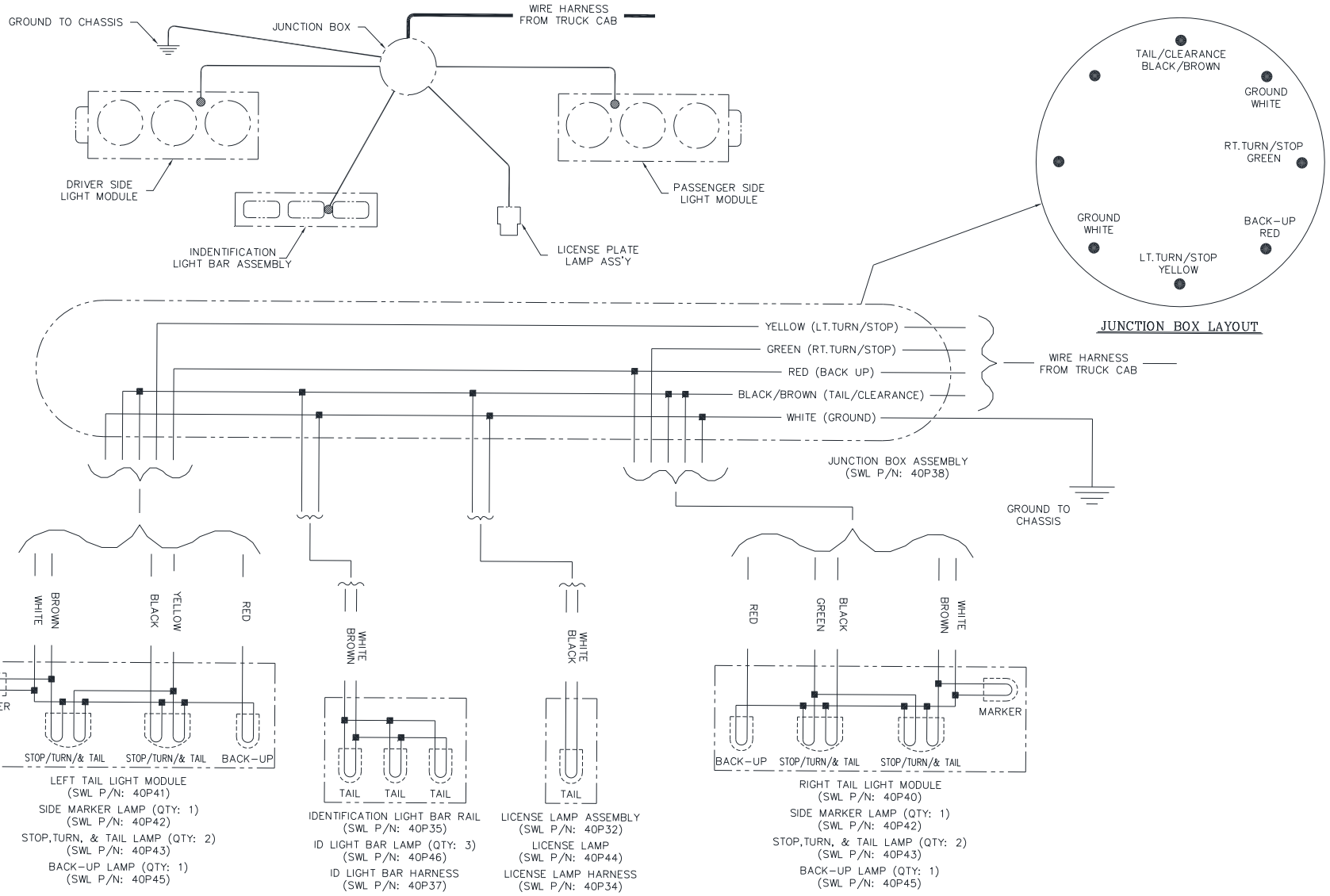
WIRING DIAGRAM



1/5/15

Fig. 4

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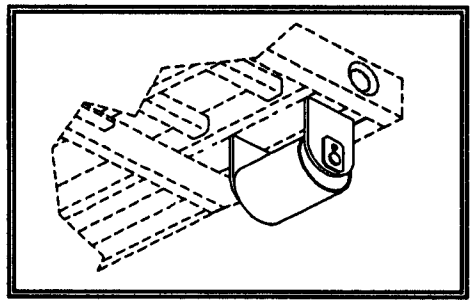

ROLLER & ROLLER MOUNT

(10H90 & 10H91)

INSTALLATION INSTRUCTIONS

1. Review all directions and diagrams provided before starting the roller and roller mount installation.
2. Locate position for roller mount brackets [Part No. 32H03] between cross sills of the container. Rollers should be positioned as far back and as wide as possible for stability. For hoist and folding bumper clearance, do not place brackets any closer than 11" to the subframe longsill (See Fig.1). Also, the roller axle center line should be approximately 1-11/16" below the bottom of the subframe longsill for roller clearance (See Fig. 1).

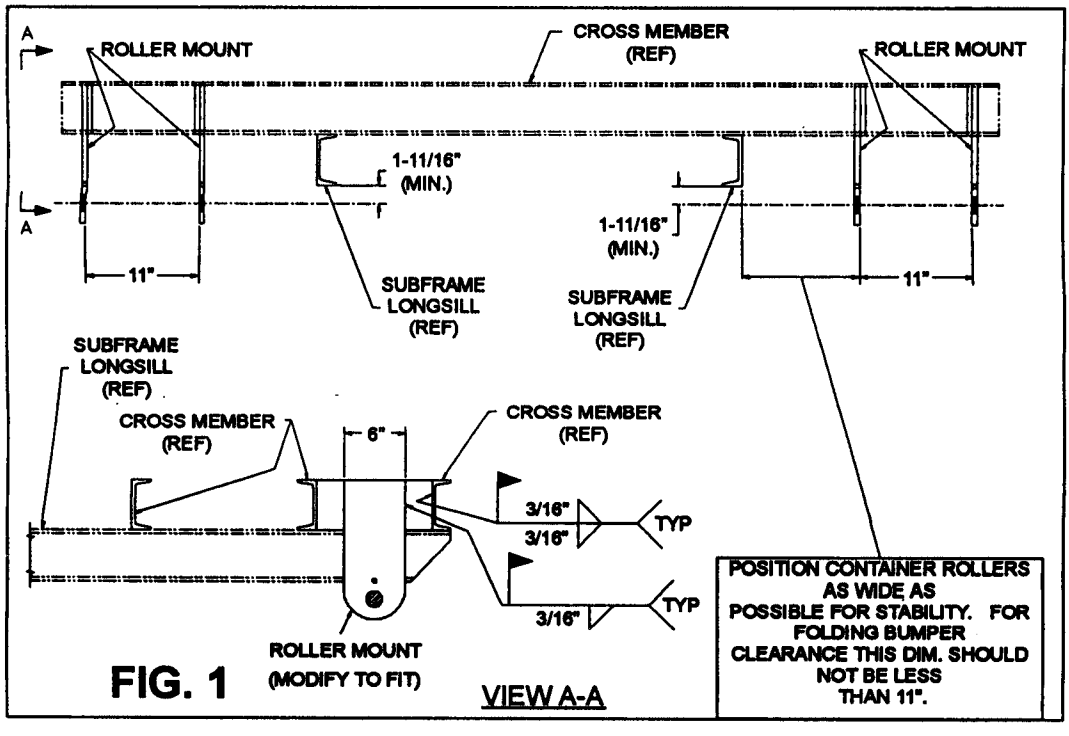

FIG. 1

VIEW A-A

ROLLER & ROLLER MOUNT
(10H90 & 10H91)

INSTALLATION INSTRUCTIONS (continued)

3. Some modification to the roller mount bracket may be required for the roller mount to fit properly. If the existing container cross members are wider than 6", a fabricated support member of 1/2" plate or thicker will need to be added (See Fig. 2).

4. Once the mount brackets are located on the container, weld the roller mount brackets in place (See Fig. 1).

5. Install the roller [Part No. 10H12] between the brackets with the roller axle [Part No.10H31] and the fasteners provided (See Fig. 3). Grease the rollers before use.

MATERIAL LIST

ITEM	QTY	P/N	DESCRIPTION	WT lb. PER EA.
1	4	32H03	ROLLER EAR	11.95
2	2	10H12	ROLLER WDMT.	39.78
3	2	10H31	ROLLER AXLE WDMT.	7.28
4	2	00P62	3/8-16 UNC X 1 BOLT	.05
5	2	90P03	1/8 NPT GREASE ZERK	.01
6	2	00755	3/8 DIA. LOCK WASHER	.01
7	2	00P36	3/8 DIA. WASHER H.T.	.10
			TOTAL	142.26

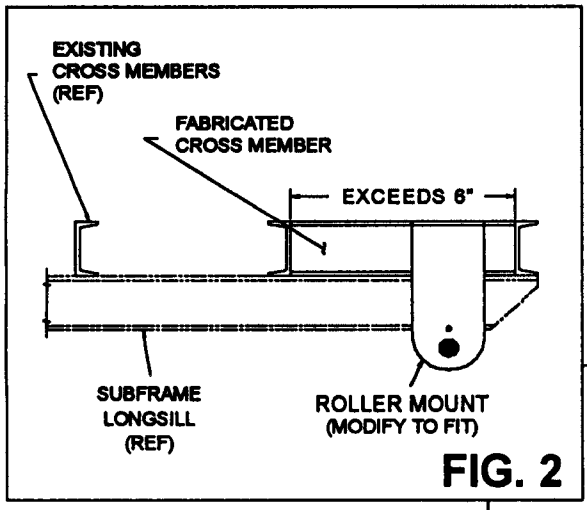

FIG. 2

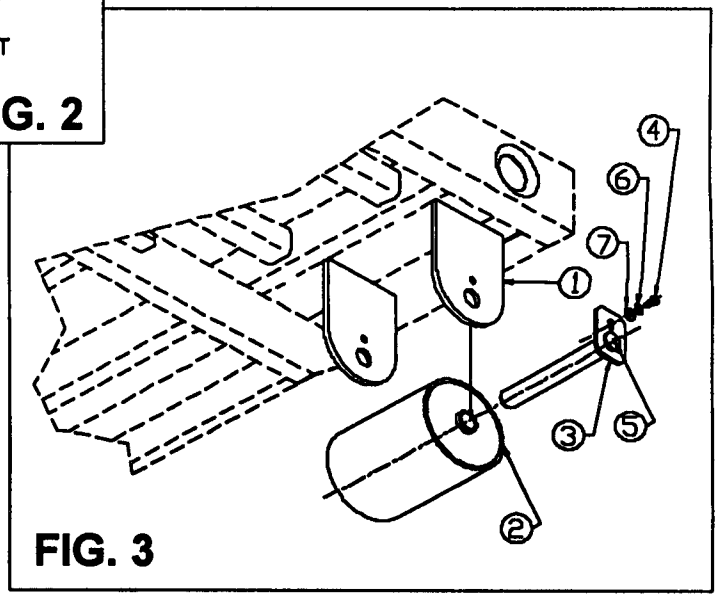

FIG. 3

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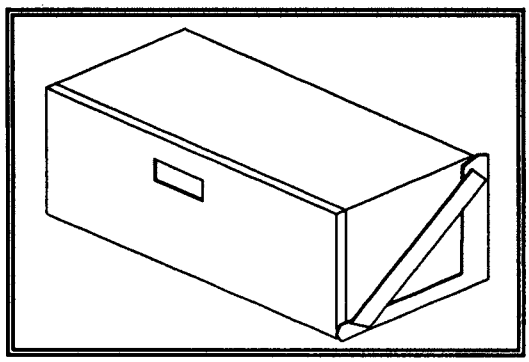

TOOLBOX

Aluminum (10H92) / Steel (11H12)

INSTALLATION INSTRUCTIONS

1. Review all directions and diagrams provided before starting toolbox installation.

2. Position toolbox brackets [Part No. 10H88] on truck chassis. (NOTE: toolbox has an envelope of 18"x18"x36". See Fig. 1 for hole dimensions.)

3. Mark position of mounting holes through brackets onto truck chassis. Remove brackets and drill 9/16" dia. holes.

4. Mount toolbox brackets using fasteners provided (See Fig. 1).

5. Position toolbox [Part No. 90P27 or 90P37] on brackets. (NOTE: toolbox hinge should be on the forward, bottom edge.)

6. Mark position of mounting holes through brackets onto toolbox. Remove toolbox and drill 9/16" dia. holes.

7. Mount toolbox to brackets using fasteners provided (See Fig. 1).

TOOLBOX
Aluminum (10H92) / Steel (11H12)

MATERIAL LIST				
ITEM	QTY	P/N	DESCRIPTION	WT lb. PER EA.
1	2	10H88	18" TOOLBOX BRACKET	11.34
2	2	22H71	TOOLBOX RUBBER SPACER (ALUMINUM TOOLBOX ONLY)	.27
3	1		18 X 18 X 36 TOOLBOX	
		90P27	ALUMINUM TOOLBOX	50.00
		90P37	STEEL TOOLBOX	72.00
4	8	00784	1/2 DIA. FLAT WASHER H.T.	.07
5	4	00P15	1/2-13 UNC X 1-3/4 HEX HEAD BOLT	.23
6	8	00P35	1/2-13 UNC METAL LOCKING NUT	.15
7	4	00P75	1/2-13 UNC X 1-1/2 SOCKET BUTTON HEAD BOLT	.12
8	4	00P76	1/2 DIA. NYLON FLAT WASHER (ALUMINUM TOOLBOX ONLY)	-
			ALUMINUM TOOLBOX TOTAL	76.38
			STEEL TOOLBOX TOTAL	97.84

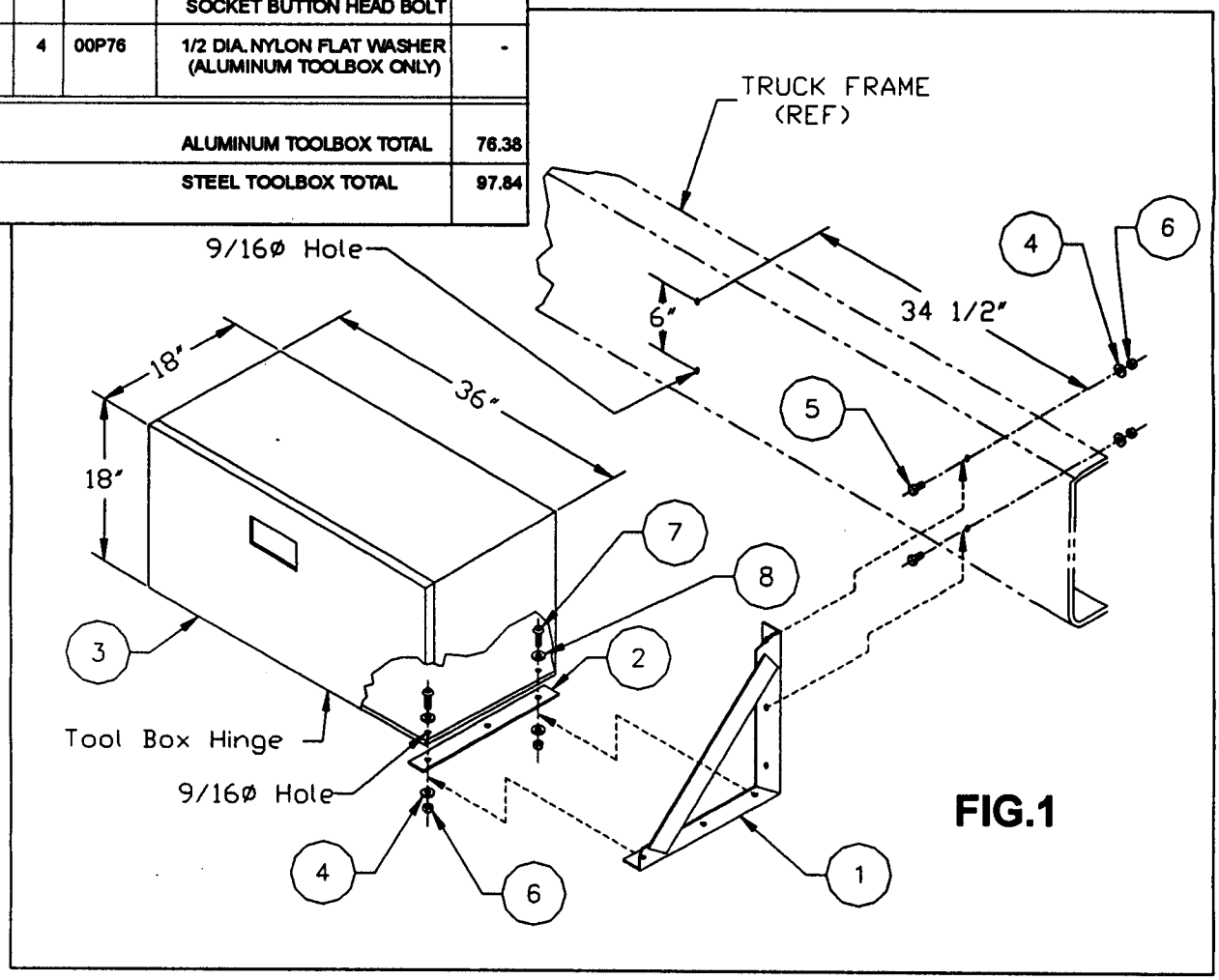

FIG.1

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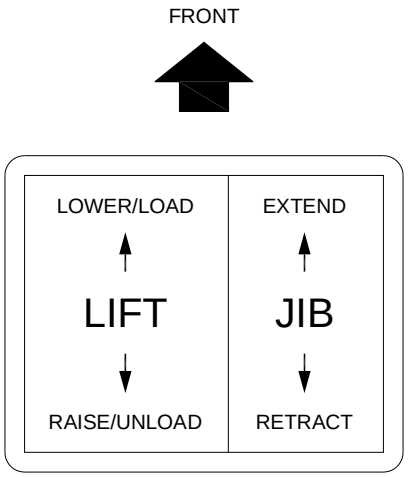
OPERATION

OPERATING INSTRUCTIONS

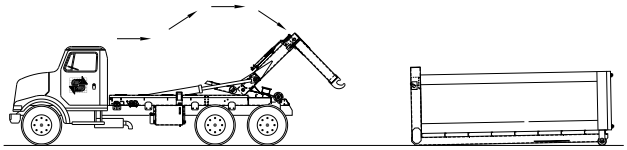
During all operations of the SwapLoader, the speed of the engine should be maintained at 1,000 to 1,200 RPM, assuming the ratio of the Power Take Off is about 100%.

LOADING A CONTAINER

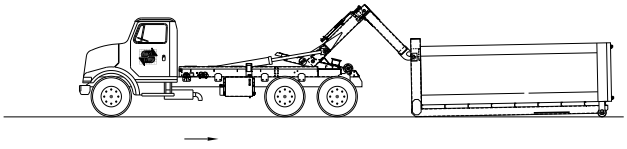
1. Engage the P.T.O. (Refer to P.T.O. manual for operation).



2. Retract the jib (right control lever backward). Then, extend the lift cylinders (left control lever backward).

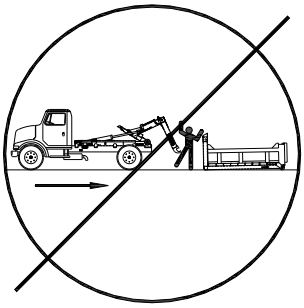


3. Make sure the work area in front of the container is clear of people and obstacles. Move the truck backwards until the hook engages the curved lifting bar of the container. **NEVER EXTEND THE JIB** to reach the proper catching height, rather extend the dump cylinders to align the jib hook to the lift bar.

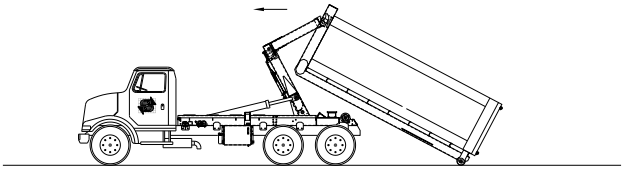


WARNING:

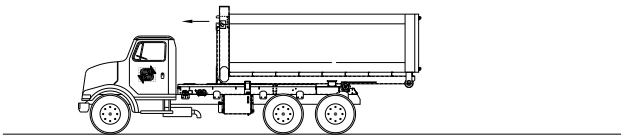
Make sure work area is clear of people and obstacles prior to dumping or unloading containers. SwapLoader strongly recommends that a back up alarm be installed on the truck chassis. The operation of the hook hoist is that the truck is backed up to the body to pick it up and so there is a potential pinch point between the body and the hook.



4. Retract the lift cylinders (left control lever forward), making sure the curved lifting bar is securely attached to the hook. Release the brakes of the truck and steer to correctly align the truck with the container. Watch the container rails to see that they come to rest centered on the rear rollers. Do not extend the jib during lifting.



5. When the container is resting on the frame, extend the jib forward all the way to ensure the container is held in the body locks (right control lever forward). Disengage the P.T.O.



DUMPING

1. Move the jib forward (right control forward) to ensure that the container is locked.

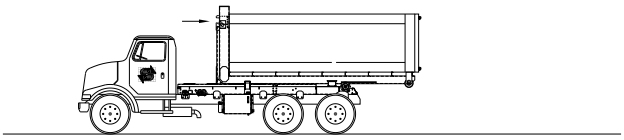
2. Extend the main lift cylinders (left control backward).

CAUTION:

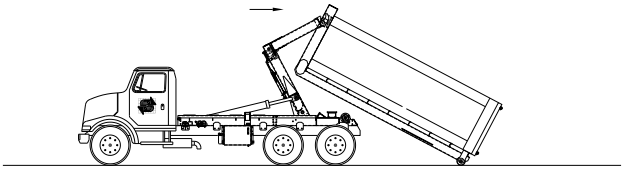
DO NOT RETRACT THE JIB WHILE DUMPING. Retracting the jib during dumping may unlock the mechanical jib latches which could allow the container to crash down onto the hoist and/or abruptly unload.

PLACING A CONTAINER ON THE GROUND

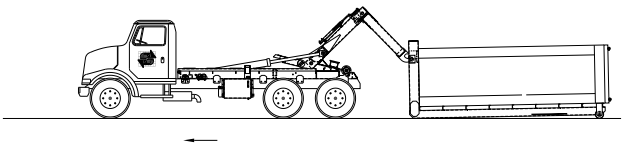
1. Move the sliding jib all the way back (right control backward) until mechanical jib latches unlock.



2. Extend the lift cylinders (left control backward). When the container touches the ground, release the brakes to free the truck for forward movement caused by the container.



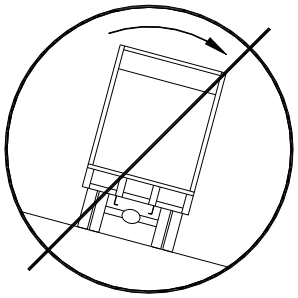
3. Extend the lift cylinders till the container lays flat on the ground. Pull away from container and rotate jib back into the transport position.



WARNING:

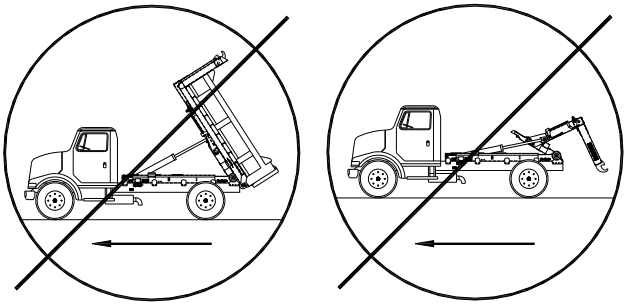
1. **DON'T OVER SPEED THE PUMP 1,500 RPM MAXIMUM.**

2. **DON'T DUMP ON UNEVEN GROUND.**



WARNING:
(CONTINUED)

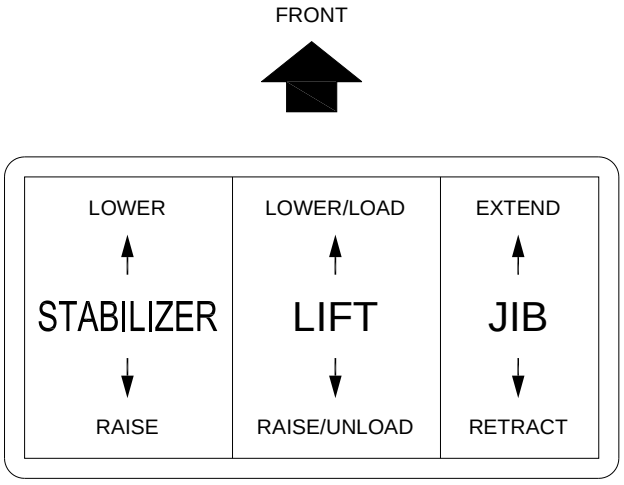
3. DON'T DRIVE WITH THE HOIST IN THE DUMP POSITION OR WITH THE HOOK TILTED BACK.



OPERATING THE STABILIZER

If loading or unloading a heavy container that would cause the front end of the truck to lift off the ground, then a stabilizer should be utilized if the unit is equipped with one.

When *Loading a Container* the stabilizer should be lowered between steps 3 & 4, while when *Placing the Container on the Ground* the stabilizer should be lowered between steps 1 &2 (see the previous operating instructions on pages 3-1 to 3-3).



To lower the stabilizer, push forward on the left control lever until the roller is all the way down.

When finished with loading or unloading the container the stabilizer roller should be raised prior to disengaging the P.T.O. To raise the stabilizer, push backward on the left control lever until the roller is all the way up.

CHANGING HOOK HEIGHTS

54” to 61-3/4” Jib Height Adjustment Procedure:

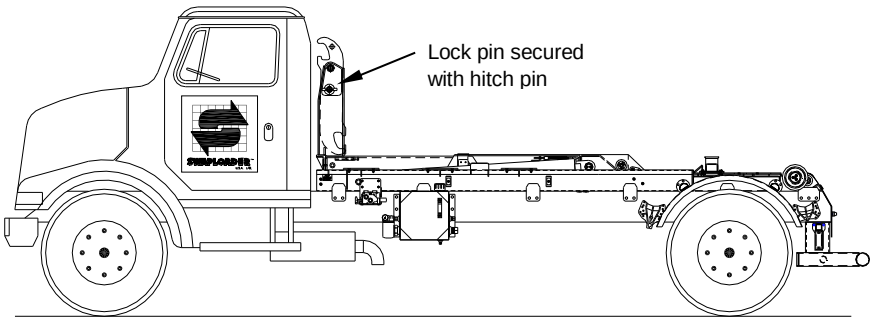
CAUTION:

The following is the recommended procedure for changing hook heights on the adjustable jib from 54” to 61-3/4” heights. Failure to follow and adhere to this procedure may result in possible property damage and/or personal injury.

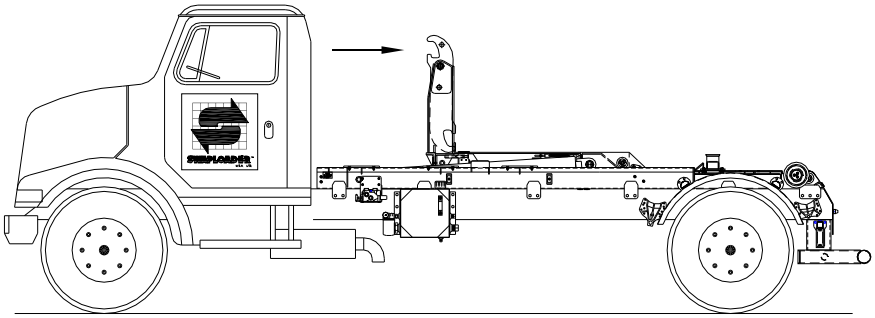
WARNING:

Make sure work area is clear of people and obstacles prior to changing the hook height on the adjustable jib.

1. With the telescopic arm in the transport position (as shown); remove the hitch pin from the lock pin. Then pull the lock pin loose from the jib arm.

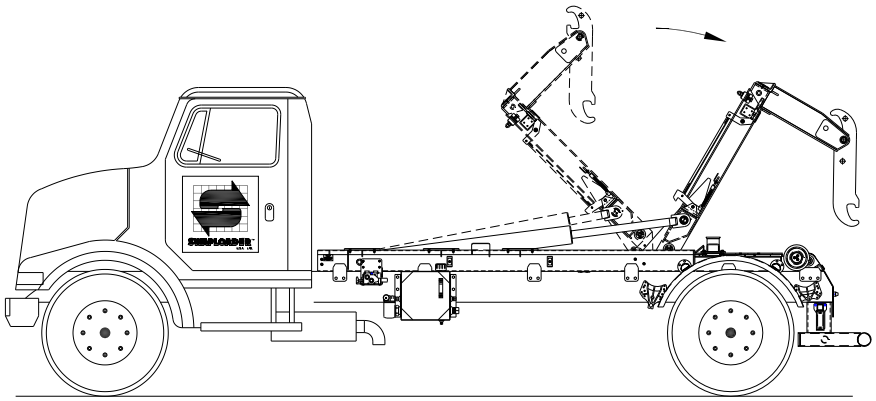


2. Retract the jib (right control lever backward). See Fig. A (Pg. 3-1).

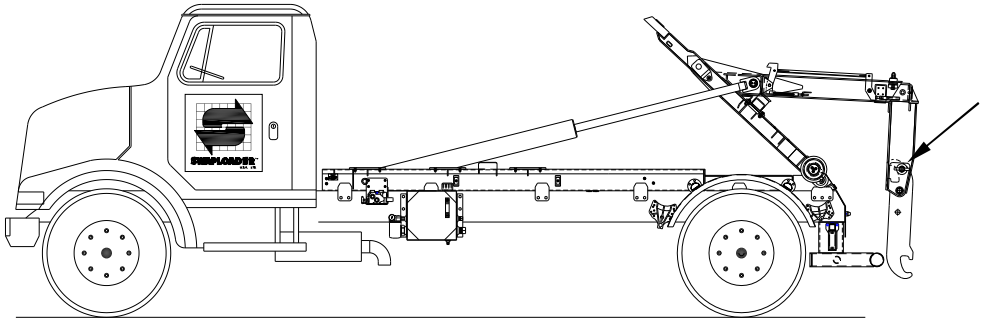


Changing Hook Height from 54” to 61-3/4” Continued:

3. Tilt the telescopic arm rearward (left control lever backward). See Fig. A (Pg. 3-1).

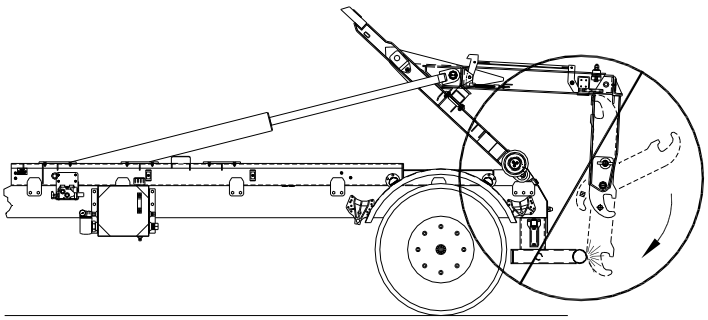


4. Continue to tilt telescopic arm rearward until the dump cylinders are fully extended. Replace lock pin and secure with hitch pin.



WARNING:

Do not remove lock pin on the adjustable jib while jib is in the 54” hook position and the telescopic arm is tilted rearward (as shown). Possible property damage and/or personal injury may result.



CHANGING HOOK HEIGHTS

61-3/4” to 54” Jib Height Adjustment Procedure:

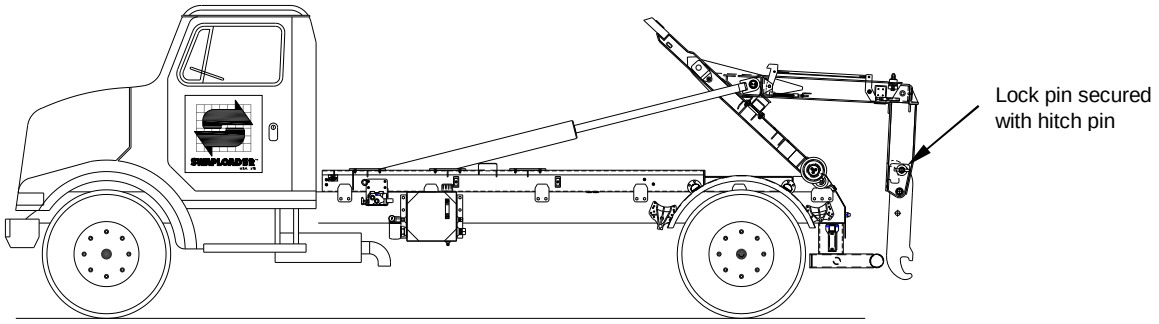
CAUTION:

The following is the recommended procedure for changing hook heights on the adjustable jib from 61-3/4” to 54” heights. Failure to follow and adhere to this procedure may result in possible property damage and/or personal injury.

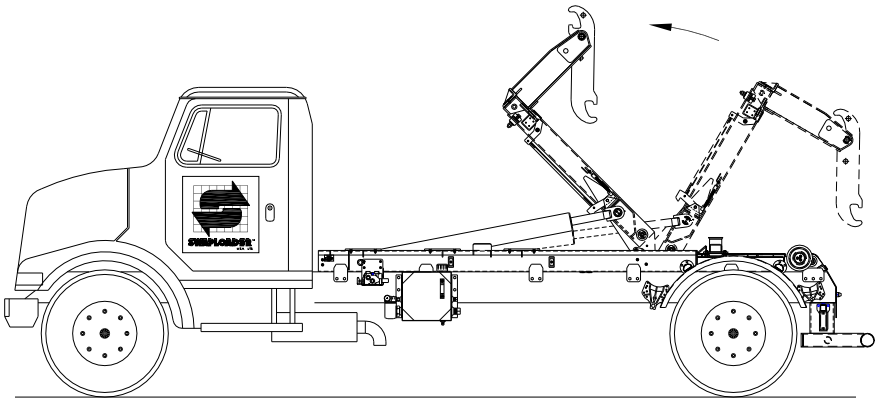
WARNING:

Make sure work area is clear of people and obstacles prior to changing the hook height on the adjustable

1. With the telescopic arm in full load/unload position (as shown); remove the hitch pin from the lock pin. Then pull the lock pin loose from the jib arm.

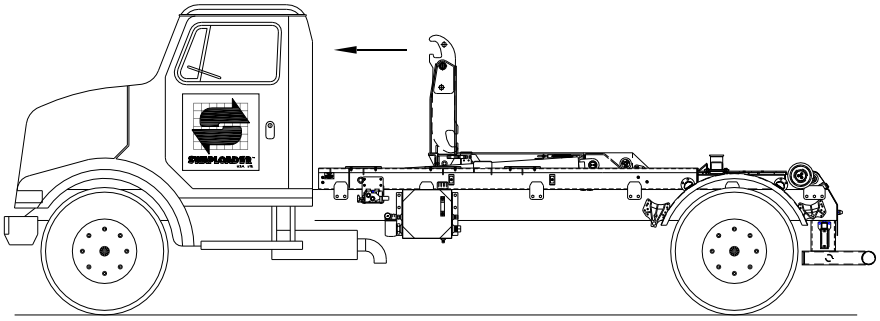


2. Tilt the telescopic arm toward the cab (left control lever forward). See Fig. A (Pg. 3-1).

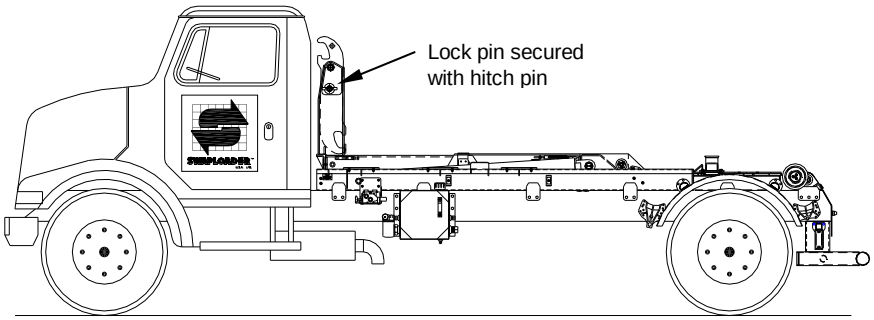


Changing Hook Height from 61-3/4" to 54" Continued:

3. Extend the jib toward the cab (right control lever forward). See Fig. A (Pg. 3-1).

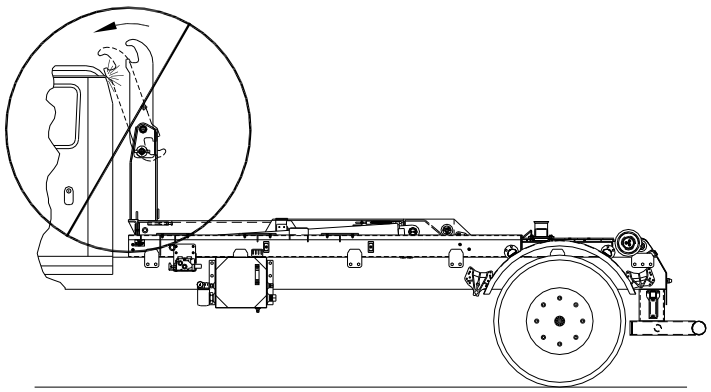


4. With the telescopic jib fully extended in the transport position (as shown); replace the lock pin and secure with hitch pin.



WARNING:

Do not remove lock pin on the adjustable jib while jib is up in the 61-3/4" hook position and telescopic arm in transport position (as shown). Possible property damage and/or personal injury may result.



MAINTENANCE

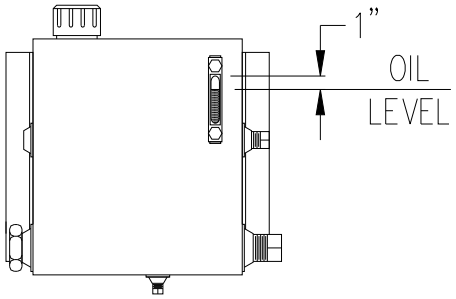
MAINTENANCE INSTRUCTIONS

WEEKLY SERVICE - (50 OPERATIONS)

1. Lubricate with grease (Refer to Lubrication Diagram)

   - Lifting hook on jib
   - Jib slide - top, bottom, and side guides

2. Check hydraulic oil level. With the hoist in the transport position (lift cylinders retracted and jib cylinder extended – see diagram on front cover) the oil level in the tank should read approximately one inch below the top of the glass sight on the temperature/sight gauge (see diagram ➔).



3. Check hydraulic hose and fittings for leaks. Also check hydraulic hose for wear. Repair and/or retighten as necessary.

MONTHLY SERVICE - (200 OPERATIONS)

1. Lubricate with grease (Refer to Lubrication Diagram)

   - Fittings on lift cylinders (quantity: 4)
   - Front pins on rear pivot joint weldment (quantity: 2)
   - Fittings on rear pivot pins and rollers (quantity: 4)

2. Check all bolts and retighten as required.

3. Check adjustments on mast lock (safety latch) mechanism. Refer to the Mast Lock Inspection & Adjustment Instructions on page 4-7 of the maintenance section.

4. Check adjustments on the jib lockout valve. Refer to the Jib Lockout Valve Inspection & Adjustment Instructions on page 4-9 of the maintenance section.

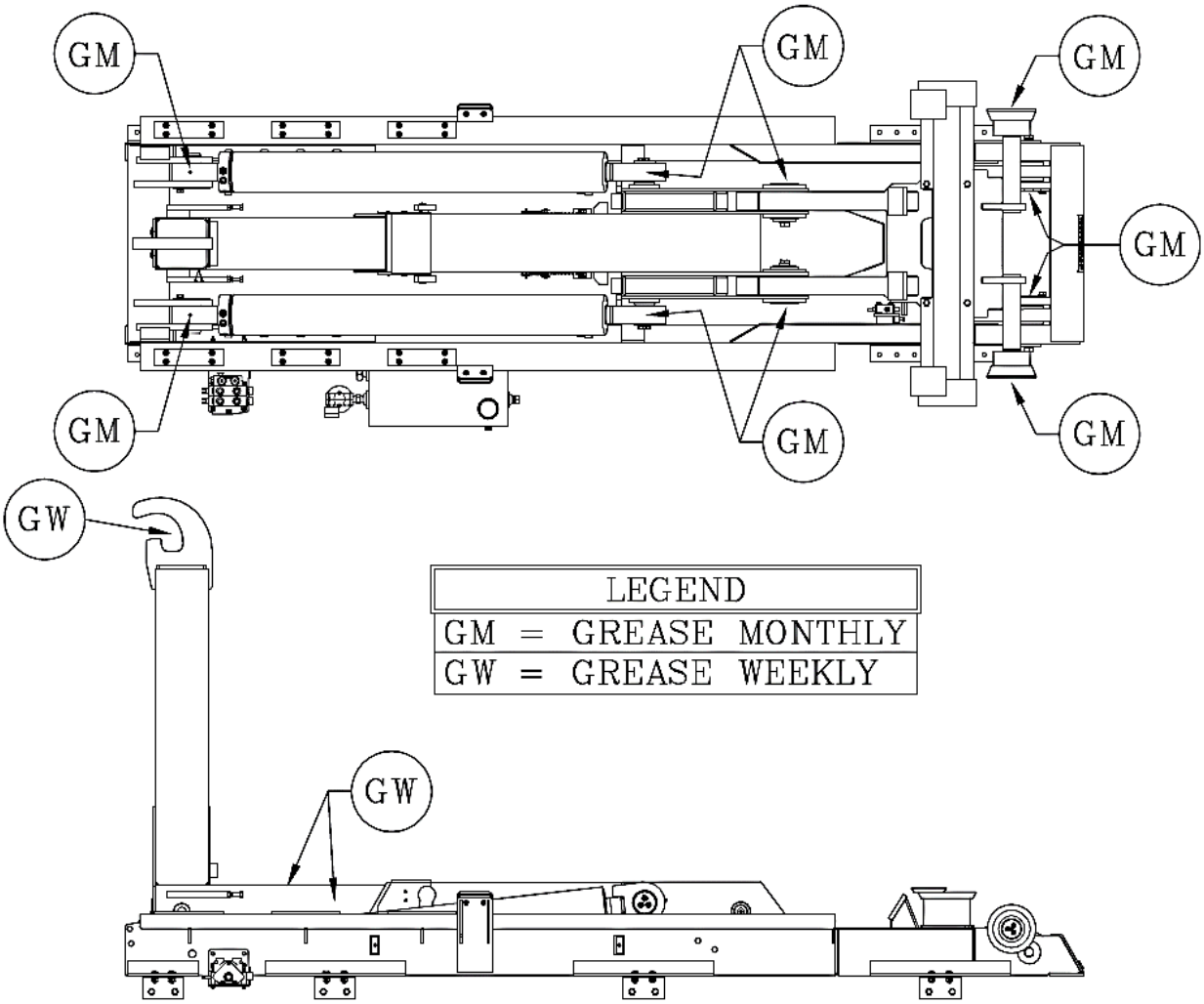
YEARLY SERVICE

1. Check for proper gapping on outer tube clamp assembly. Refer to the Outer Tube Clamp Inspection & Adjustment Instructions on page 4-13 of the maintenance section.

2. Change hydraulic oil, replace hydraulic filter element, and wash out suction strainer.

3. Check main relief valve setting. Refer to the Pressure Check Instructions on page 4-11 of the maintenance section. (Pressure should be 3,500 PSI minimum).

LUBRICATION DIAGRAM



LEGEND
GM = GREASE MONTHLY
GW = GREASE WEEKLY

HYDRAULIC OIL SPECIFICATION & INTERCHANGE CHART

Select an ISO grade of Premium Anti-Wear Hydraulic Oil that is optimum for your location.

HYDRAULIC OIL SELECTION CHART

ISO Grade	Ambient Temperature Range		Viscosity
	°F	°C	SUS @ 100 °F
32	-10 to 85	-23 to 29	150-170
46	10 to 110	-12 to 43	195-240

NOTE 1: Always consult your local hydraulic oil supplier for more information.

NOTE 2: Use caution when operating at or beyond the recommended temperature extremes.

NOTE 3: Do not operate the hooklift hoist when hydraulic oil temperature on tank gauge exceeds 160 °F (71 °C) as damage to hydraulic components can occur.

ISO Grade 32

Company Name	Brand Name & Grade
Castrol (BP)	Paradene 32AW
CITGO	A/W 32
Exxon	Nuto H 32
Mobil	DTE 24 (DTE 13)
Shell	Tellus 32
SUNOCO	Sun Vis 706 (816 WR)

ISO Grade 46

Company Name	Brand Name & Grade
Castrol (BP)	Paradene 46AW
CITGO	A/W 46
Exxon	Nuto H 46
Mobil	DTE 25 (DTE 15)
Shell	Tellus 46
SUNOCO	Sun Vis 747 (821 WR)

HYDRAULIC FILTER ELEMENT SPECIFICATIONS & INTERCHANGE CHART

Element Size: 5.10 ϕ x 10.9”
Mounting Thread: 1 1/2-16 UN-2B
Filtration Rating: 10 micron (Nominal)
Flow Rating: 60 GPM

Company Name	Filter Part Number
Baldwin	BT-388-10
Can Flo	RSE60-10N
Case	D-130046
Donaldson	HSM6047
Fleetguard	R750-H-0825A
FPC	HF6711

Company Name	Filter Part Number
Hydac	0180MA010P
LHA	SPE60-10
Norman	610
Parker	927736
Wix	51860
Zinga *	LE-10

* Brand of Element supplied from factory on hoist.

GENERAL MAINTENANCE PARTS LIST

PT. NO.	DESCRIPTION
22P24	**HYDRAULIC CYLINDER 6ϕ X 56 (Lift/Dump)**
22P43	LINE ASS'Y, HYDRAULIC CYLINDER
22P41	SEAL KIT, HYDRAULIC CYLINDER
21P11	HYDRAULIC VALVE CARTRIDGE, COUNTERBALANCE
22P15	SPHERICAL BEARING 3" ID
22P19	SNAP RING FOR BEARING
	* * * * * * * *
22P25	**HYDRAULIC CYLINDER 4ϕ X 30 (Jib)**
22P42	SEAL KIT, HYDRAULIC CYLINDER
21P17	HYDRAULIC VALVE CARTRIDGE, COUNTERBALANCE
	* * * * * * * *
20P87	**HYDRAULIC PUMP, GEAR (3.83 CID, L.H. ROT.) - Optional**
21P03	**HYDRAULIC PUMP, GEAR (3.83 CID, R.H. ROT.) - Optional**
20P41	SEAL KIT, HYDRAULIC PUMP
	* * * * * * * *
20P61	**HYDRAULIC FILTER ASSEMBLY, 60 GPM**
20P66	HYDRAULIC FILTER ELEMENT
20P64	INDICATOR GAUGE, FILTER
	* * * * * * * *
20P86	**HYDRAULIC TANK, 30 GALLON LS**
21P16	STRAINER, TANK MOUNTED - 50 GPM
20P96	SIGHT GAUGE, HYDRAULIC TANK

20P97 BREATHER CAP ASSEMBY, HYDRAULIC TANK

* * * * * * * *

20P88 **HYDRAULIC CONTROL VALVE, 2 SECT.**

21P04 HYDRAULIC RELIEF VALVE CARTRIDGE (3,500 PSI)

* * * * * * * *

21P28 **HYDRAULIC VALVE, 2-WAY**

21P38 SEAL KIT FOR 21P28

* * * * * * * *

90P71 **WEAR PAD, 12" - (Z-CHANNEL)**

00755 3/8ϕ LOCK WASHER

00P14 3/8-16 HEX NUT

00P68 3/8-16 x 1 1/4 FL HD SCREW (SST)

* * * * * * * *

80H35 **CLAMP LINER – (OUTER TUBE)**

00P68 3/8-16 x 1 1/4 FL HD SCREW (BRASS)

* * * * * * * *

87H44 **CLAMP LINER – (OUTER TUBE SIDES)**

87H45 WEAR BLOCK SHIM

00P79 3/8-16 x 3/4 FL HD SCREW (BRASS)

* * * * * * * *

60H11 **WEAR BLOCK – (JIB)**

61H90 WEAR BLOCK SPACER

01P51 3/8-16 x 1 FL HD SCREW (BRASS)

* * * * * * * *

REPLACEMENT BEARING LIST

PT. NO.	DESCRIPTION
41H99	**PIVOT PIN (FOR 43H69 PIVOT JOINT SUB-ASSEMBLY)**
50P20	ALUMINUM BRONZE BEARING; QTY: 1 PER PIN

* * * * * * * *

42H10	**MAIN PIVOT PIN (FOR 43H69 PIVOT JOINT SUB-ASSEMBLY)**
50P20	ALUMINUM BRONZE BEARING; QTY: 1 PER PIN

* * * * * * * *

80P09	**ROLLER ASSEMBLY (FOR 43H69 PIVOT JOINT SUB-ASSEMBLY)**
23H07	BRONZE BEARING; QTY: 1 PER ROLLER

* * * * * * * *

MAST LOCK INSPECTION & ADJUSTMENT INSTRUCTIONS

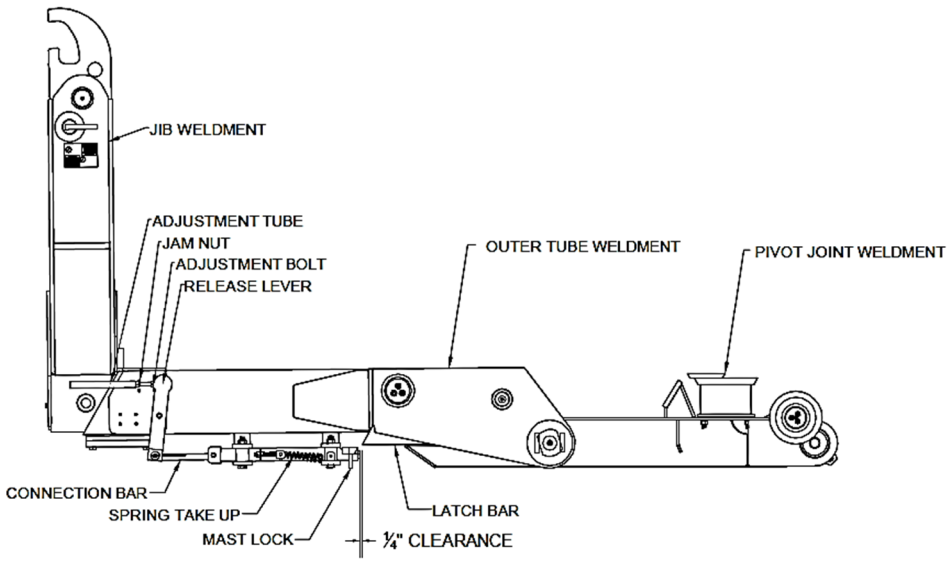
All SwapLoader hook-lift hoists come with a mast lock (safety latch) assembly that is located on the bottom side of the outer tube. When the jib is extended the mast lock then engages the latch bars (forks) on the pivot joint, making the jib, outer tube, and pivot joint into a continuous member for raising the container or body up into a dump mode.

With the jib fully retracted the mast lock then disengages the latch bars on the pivot joint allowing the hook-lift to enter into the mount-dismount cycle by pivoting around the front pins of the pivot joint. A properly adjusted mast lock will function smoothly and clear the latch bars on the pivot joint approximately a **1/4"** (see illustrations below).

INSPECTION

The mast lock assembly comes adjusted from the factory and should provide years of trouble free operation, however there may come a time when an adjustment may be required. Prior to making any adjustments, SwapLoader recommends that you begin with inspecting all mast lock components for damage or wear (see illustrations below).

First inspect the adjustment tube and bolt on the jib; make sure nothing is missing or bent. Next, inspect the release lever and connection bar on the outer tube; look for any missing or bent components such as ears or pins. Finally, inspect the safety latch (see illustration below); again make sure there are no missing or bent components such as ears, pins, etc. Repair or replace any missing or bent components prior to making any adjustment to the mast lock assembly; refer to the mast lock (safety latch) assembly drawing for proper part numbers and identification of the components (See Drawing No. 43H62 in the Part List pages of the manual).



MAST LOCK ADJUSTMENT ILLUSTRATION
(SHOWN WITH THE JIB RETRACTED)

ADJUSTMENT

If after inspecting all mast lock components and making any necessary repairs the gap between the mast lock and latch bars on the pivot joint is still incorrect, then an adjustment will need to be made. Please complete the following steps:

1. Retract the telescopic jib until the cylinder completely bottoms out (fully retracted).

2. Inspect the gap between the mast lock latch and the latch bar on the pivot joint. Look for a clearance of approximately 1/4" (if not proceed to steps 3-5).

3. Loosen the jam nut on the adjustment bolt.

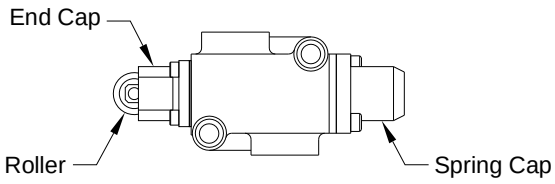
4. Turn the adjustment bolt; counter-clockwise to increase the gap or clockwise to decrease the gap.

5. Once the 1/4" clearance is achieved, then tighten the jam nut. Make sure to hold the adjustment bolt from turning when tightening the jam nut.

Please contact your SwapLoader Distributor or SwapLoader USA should you have any questions regarding this procedure.

JIB LOCKOUT VALVE INSPECTION & ADJUSTMENT INSTRUCTIONS

All SwapLoader hook-lift hoists have a jib lockout valve (see illustration below) to prevent accidental operation of the telescopic jib, while the hoist is up in a dump mode. Because the jib lockout valve can block the flow of hydraulic oil to the jib cylinder, should the valve come out of adjustment the telescopic jib may experience a reduction in extension or retraction speed to the point of stalling out.

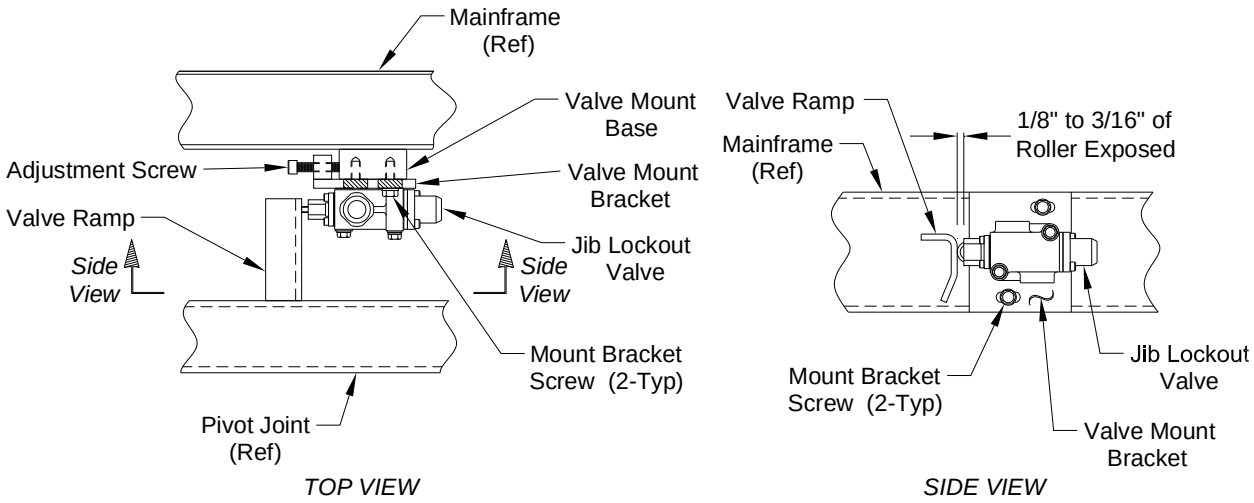


JIB LOCKOUT VALVE ILLUSTRATION

INSPECTION

When a noticeable loss in extension or retraction speed of the telescopic jib is experienced, the first step should be to inspect the jib lockout valve and valve mount ramp to ensure that they are adjusted properly and in good working order. The jib lockout valve is located on the inside rail of the hoist mainframe approximately two-thirds of the way back on the driver side of the hoist (see Drawing No. 43H27 in the Part List pages of the manual). Visually inspect the jib lockout valve roller and the condition of the valve ramp on the hoist pivot joint without a container on the hoist (see illustration on the next page); this is most easily performed with the hoist back in a dismount mode. If either part shows signs of wear or damage then replace or repair as needed.

With the jib lockout valve roller and valve ramp in good condition the next step is to check that the valve is positioned correctly with respect to the valve ramp. While looking at the roller end of the jib lockout valve, notice that the roller moves in and out of an end cap. With the hoist pivot joint in the down position, or horizontal to the hoist mainframe, the valve ramp should be in contact with the jib lockout valve roller. The roller should be depressed by the valve ramp so that 1/8” to 3/16” of the roller is exposed from the end cap (see illustrations above and on next page).



JIB LOCKOUT VALVE ADJUSTMENT ILLUSTRATION

ADJUSTMENT

Should the jib lockout valve need adjustment the first step will be to loosen the mount bracket screws (see illustration above). Reposition the jib lockout valve with respect to the valve ramp by turning the adjustment screw on the valve mount bracket as follows:

Clockwise Adjustment – Moves the jib lockout valve closer to the valve ramp
Counter-Clockwise Adjustment – Moves the jib lockout valve away from the valve ramp

Once the valve has been moved back into proper adjustment, then tighten up the mount bracket screws.

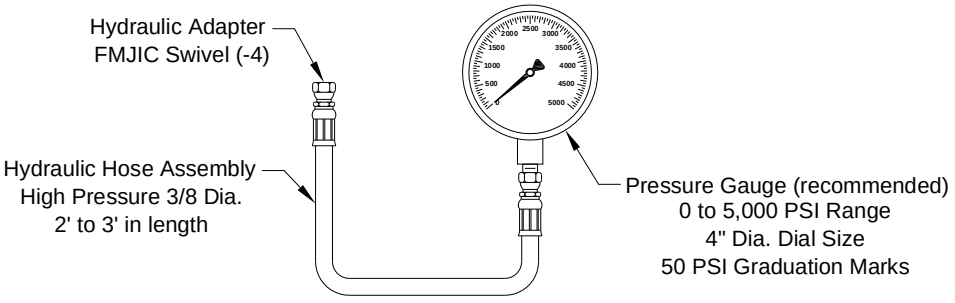
PART NUMBER & SPECIFICATION

SwapLoader Pt. No.	Work Port Size	Spool Type	Pressure (Maximum)	Flow Rate (Maximum)
21P28	3/4-16 ORB (SAE 8)	2-Way, 2-Position N.C.	4,600 PSI (Nominal)	16 GPM (Nominal)

Please contact your SwapLoader Distributor or SwapLoader USA should you have any questions regarding this procedure.

PRESSURE CHECK INSTRUCTIONS

When performing a pressure check on a SwapLoader hook-lift hoist, we recommend that you use a calibrated pressure gauge that reads pressures up to 3,500 PSI (a 0 to 5,000 PSI range gauge is recommended). As a minimum, the gauge should have 100 PSI graduation marks (50 PSI is preferred), and a 3 inch diameter dial size (4 inch dial is preferred). The pressure gauge should be outfitted with a female JIC #4 hydraulic adapter; preferably located at the end of a 3/8 inch diameter high pressure hydraulic hose that is 2 to 3 foot in length (see illustration below).

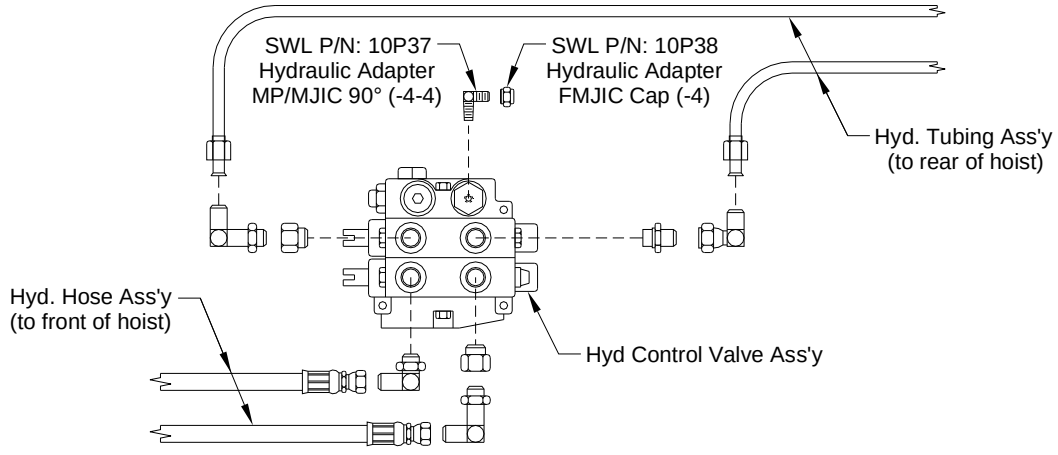


RECOMMENDED PRESSURE GAUGE ILLUSTRATION

Should you not be able to source a hydraulic gauge locally, SwapLoader can provide one at a reasonable cost (Hyd. Pressure Gauge & Hose Ass'y – Part No. 22P10).

PRESSURE CHECK STEPS

1. Locate the 90° male JIC #4 hydraulic adapter (SWL #10P37) found on the top of the hoist hydraulic control valve (see illustration below).

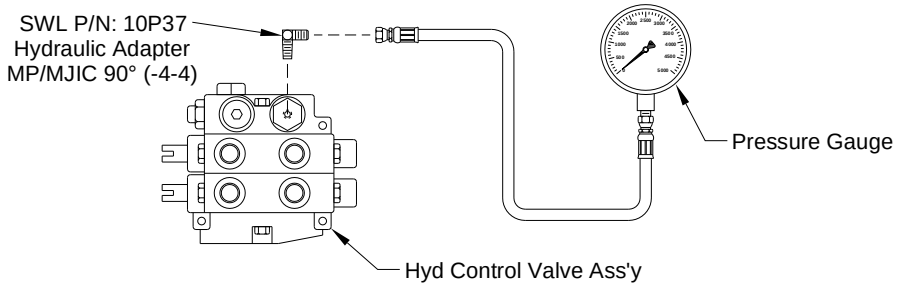


PRESSURE CHECK HYDRAULIC ADAPTER LOCATION ILLUSTRATION

This 90° male #4 JIC hydraulic adapter is supplied by SwapLoader, and should be installed in the hydraulic control valve at the time of the hoist installation (see the hoist

parts & operations manual).

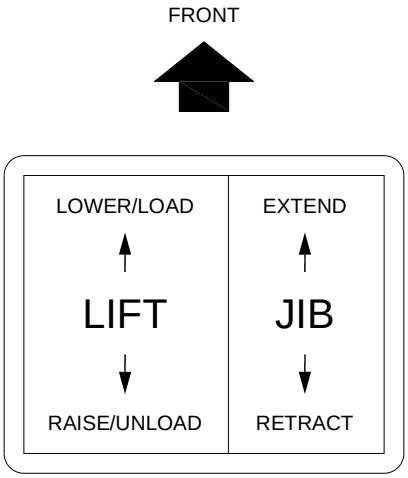
2. Remove the female JIC #4 cap from the male JIC #4 adapter and attach the pressure gauge to the hydraulic control valve (see illustration below).



PRESSURE GAUGE TO HYDRAULIC ADAPTER ILLUSTRATION

3. Start the truck and engage the P.T.O.

4. Push the lift (dump) circuit lever forward until the lift (dump) cylinders bottom out (see illustration below). Continue to push the lever forward until steps 5-6 are complete.



5. Check the gauge for the maximum developed system pressure. The SL-412 should have a reading of 3,500 PSI.

6. With the pressure check complete; release all functions and disengage the P.T.O.

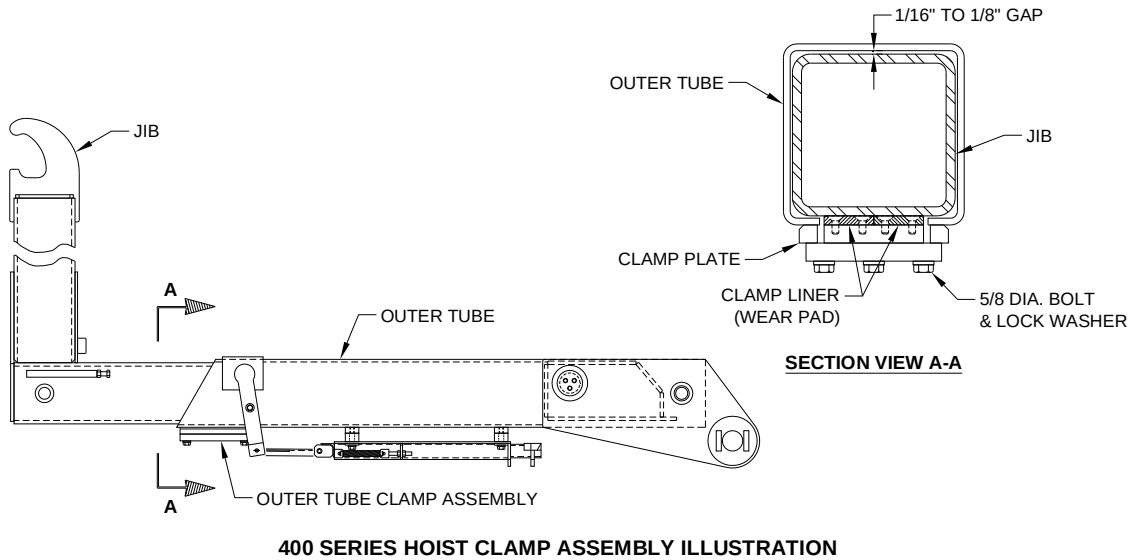
Please contact your SwapLoader Distributor or SwapLoader USA should you have any questions regarding this procedure.

OUTER TUBE CLAMP ASSEMBLY INSPECTION INSTRUCTIONS

All SwapLoader hooklift hoists come equipped with an outer tube clamp assembly located on the bottom of the outer tube at the opening where the jib telescopes in and out (see illustration below). On SwapLoader 400 series hoist models the outer clamp assembly is fixed in height.

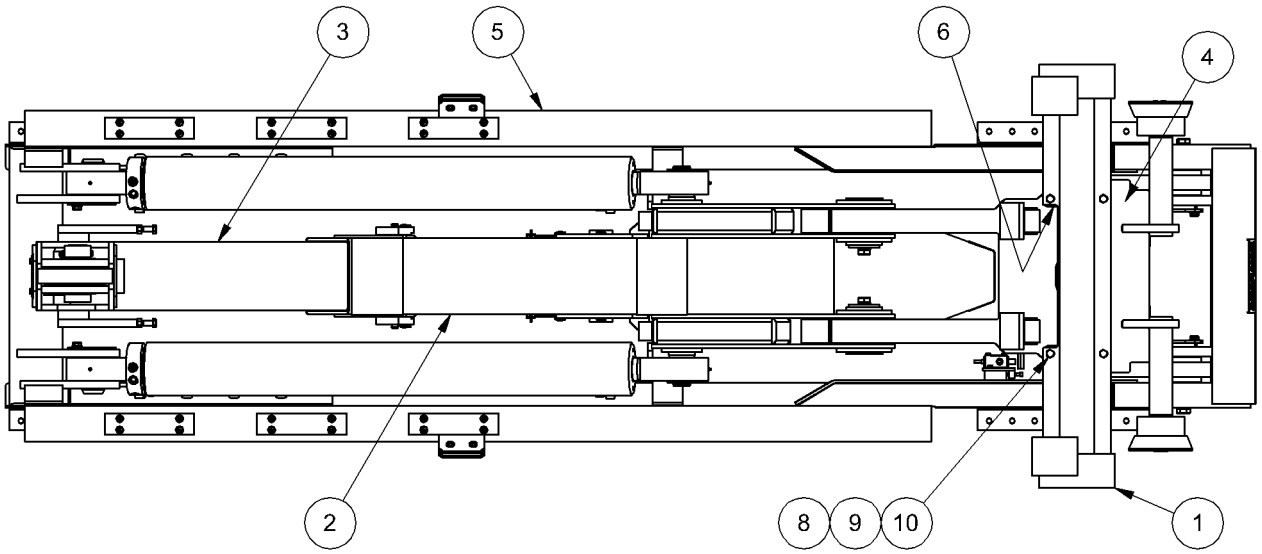
INSPECTION

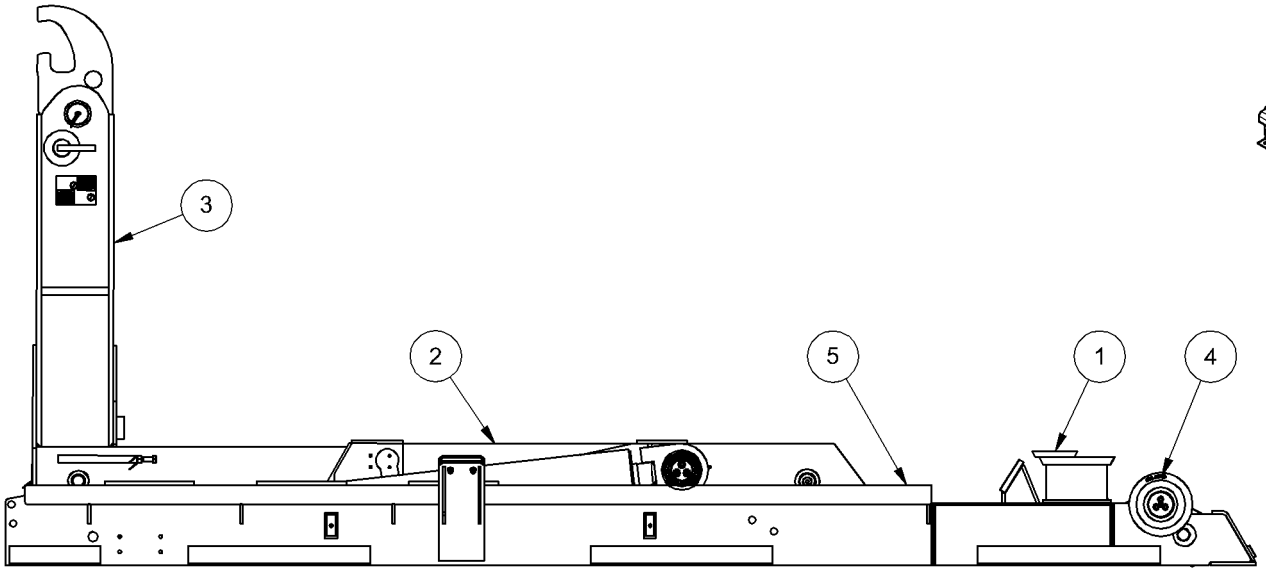
The illustration below is a typical hoist clamp assembly for the SwapLoader 400 series hoist models. For optimum performance out of your SwapLoader SL-406 hooklift the gap between the top of the jib horizontal tube and the top inside surface of the outer tube should be kept between 1/16" to 1/8" (see Section View A-A below). When a gap greater than 1/8" exists, since the clamp assembly has a fixed elevation, inspect the clamp liner, clamp plate, and fasteners for excessive wear or damage (see Section View A-A below). Replace parts as needed to bring the outer tube clamp assembly back to recommended specifications (see Drawing No. 43H29 in the Parts List pages of the manual).

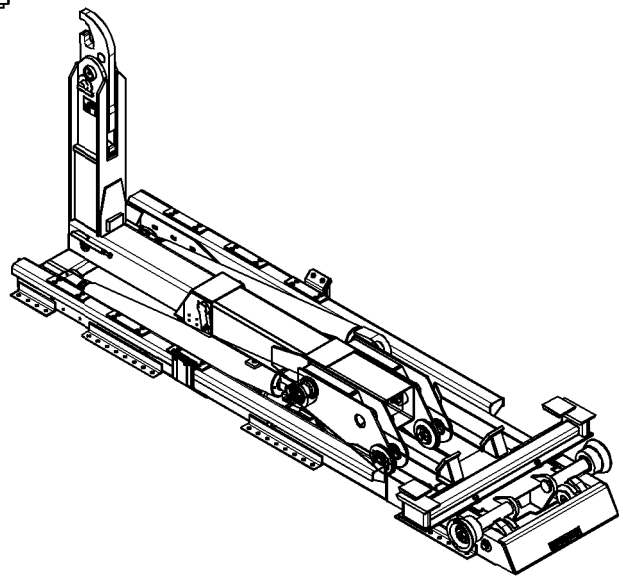


400 SERIES HOIST CLAMP ASSEMBLY ILLUSTRATION

PARTS LIST







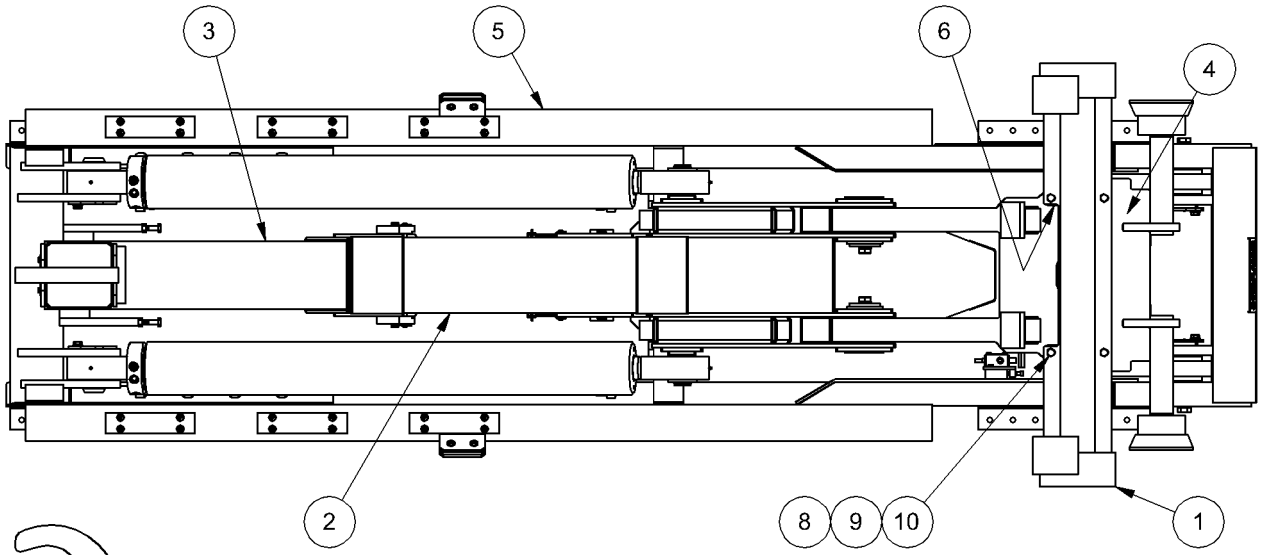
PARTS PER 43H58				
ITEM	QTY	PART #	DESCRIPTION	WT-lb/ea.
1	1	42H17	DUAL BODY LOCK SUB-WELDMENT	142.03
2	1	43H60	OUTER TUBE SUB-ASSEMBLY	990.67
3	1	43H64	ADJUSTABLE JIB SUB-ASSY	918.68
4	1	43H69	PIVOT JOINT SUB-ASSEMBLY	681.10
5	1	43H72	MAINFRAME SUB-ASSEMBLY	2036.91
6	2	88H03	BODY LOCK SPACER	1.20
7	1	91H17	HYD SUB-ASSY BASE- NOT SHOWN	19.45
8	4	00P24	5/8-11 UNC HEX NUT (GR. 8)	0.08
9	4	00P70	5/8" LOCK WASHER	0.03
10	4	01P17	5/8-11 UNC x 2 1/4" HHCS (GR. 8)	0.26
11	1	91P09	SERIAL TAG - NOT SHOWN	0.02
			TOTAL	4768.22

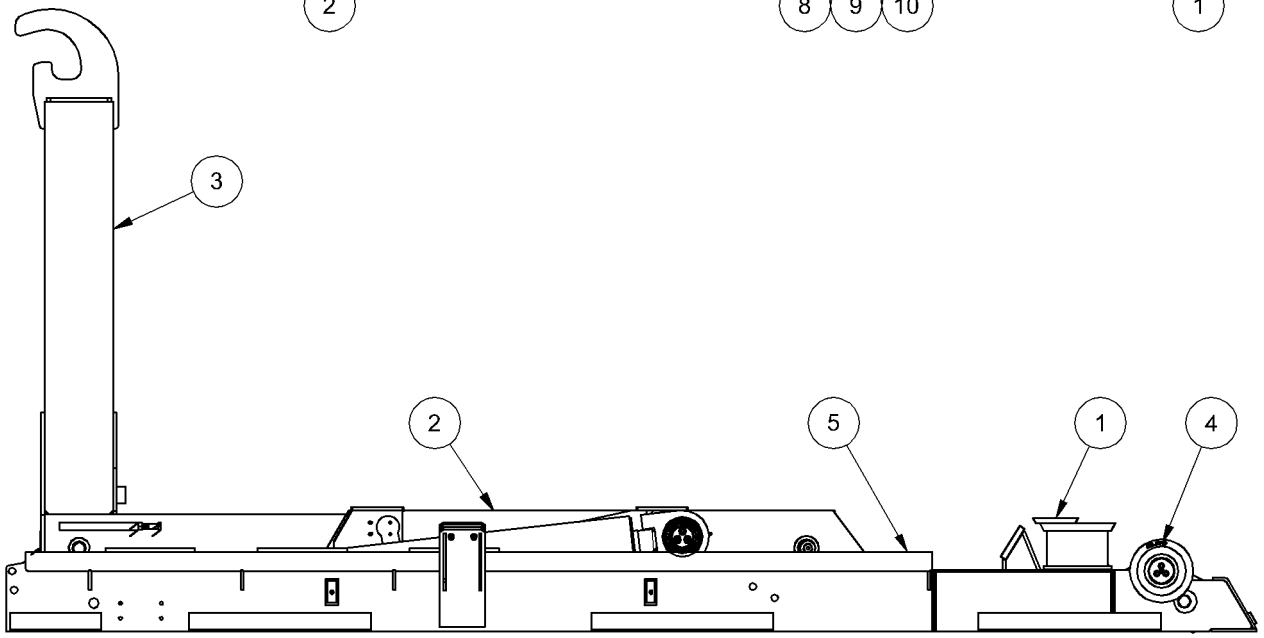
SL-412 BASE ASSEMBLY W/ ADJ. JIB (43H58)

SWAPLOADER U.S.A. LTD.

TITLE: BASE HOIST ASSEMBLY W/ADJ. JIB

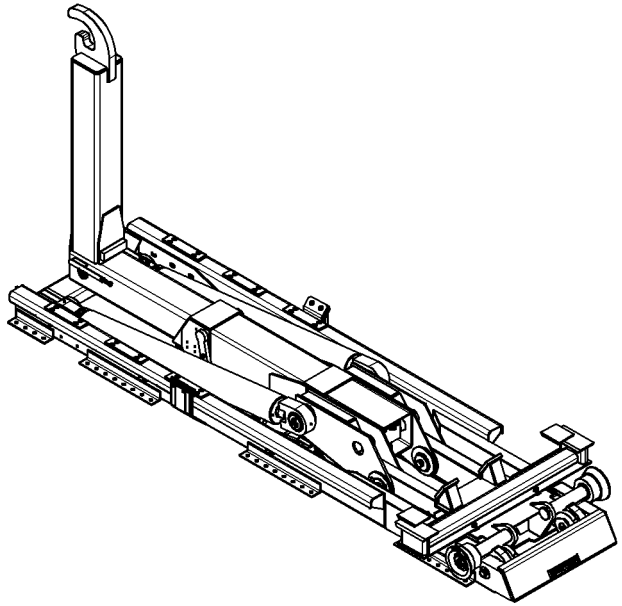
DRAWING NO.	MODEL NO.	REV
43H-58	SL-412	





SL-412 BASE ASSEMBLY W/ FIXED JIB (43H59)

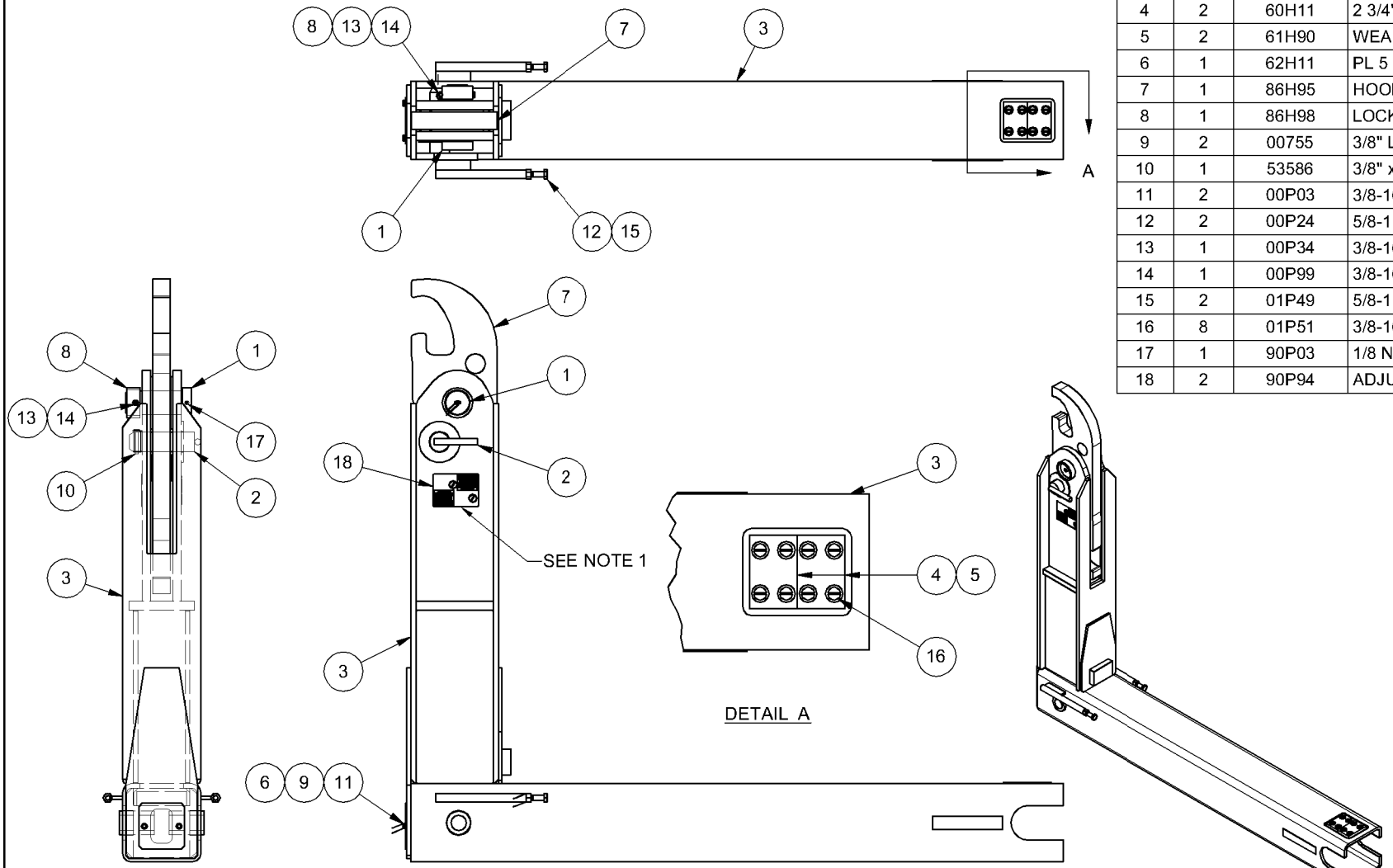
PARTS PER 43H59				
ITEM	QTY	PART #	DESCRIPTION	WT-lb/ea.
1	1	42H17	DUAL BODY LOCK SUB-WELDMENT	142.03
2	1	43H60	OUTER TUBE SUB-ASSEMBLY	990.67
3	1	43H66	FIXED JIB ASSEMBLY	763.51
4	1	43H69	PIVOT JOINT SUB-ASSEMBLY	681.10
5	1	43H72	MAINFRAME SUB-ASSEMBLY	2036.91
6	2	88H03	BODY LOCK SPACER	1.20
7	1	91H17	HYD SUB-ASSY BASE - NOT SHOWN	19.45
8	4	00P24	5/8-11 UNC HEX NUT (GR. 8)	0.08
9	4	00P70	5/8" LOCK WASHER	0.03
10	4	01P17	5/8-11 UNC x 2 1/4" HHCS (GR. 8)	0.26
11	1	91P09	SERIAL TAG - NOT SHOWN	0.02
			TOTAL	4613.04



SWAPLOADER U.S.A. LTD.

TITLE: BASE HOIST ASSEMBLY W/FIXED JIB

DRAWING NO.	MODEL NO.	REV
43H-59	SL-412	



ADJUSTABLE JIB SUB-ASSEMBLY (43H64)

PARTS PER 43H64

ITEM	QTY	PART #	DESCRIPTION	WT-lb/ea.
1	1	43H10	PIVOT PIN WELDMENT	12.37
2	1	43H11	LOCK PIN WELDMENT	9.69
3	1	43H65	ADJUSTABLE JIB WELDMENT	741.07
4	2	60H11	2 3/4" x 1/2" x 4 1/4"	0.21
5	2	61H90	WEAR BLOCK SPACER	0.40
6	1	62H11	PL 5 1/4" x 11 Ga x 5 1/4"	0.92
7	1	86H95	HOOK	150.70
8	1	86H98	LOCK TUBE	1.25
9	2	00755	3/8" LOCK WASHER	0.00
10	1	53586	3/8" x 2 1/2" SAFETY SNAP PIN	0.14
11	2	00P03	3/8-16 UNC x 3/4" HHCS	0.04
12	2	00P24	5/8-11 UNC HEX NUT (GR. 8)	0.08
13	1	00P34	3/8-16 UNC LOCKING HEX NUT	0.02
14	1	00P99	3/8-16 UNC x 4" HHCS	0.14
15	2	01P49	5/8-11 UNC x 2 3/4" HHCS	0.30
16	8	01P51	3/8-16 UNC x 1" F.H. SCREW	0.04
17	1	90P03	1/8 NPT ST Zerk	0.02
18	2	90P94	ADJUSTABLE JIB OPERATION	0.00
			TOTAL	915.41

SHOP NOTES:

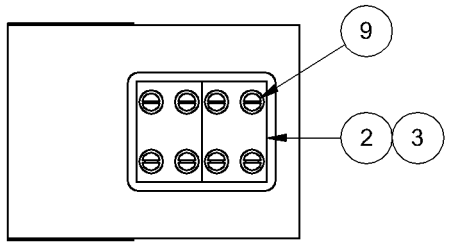
1. INSTALL DECAL SO 90P94 PART NO. IS IN THE LOWER RIGHT HAND CORNER.

SWAPLOADER U.S.A. LTD.

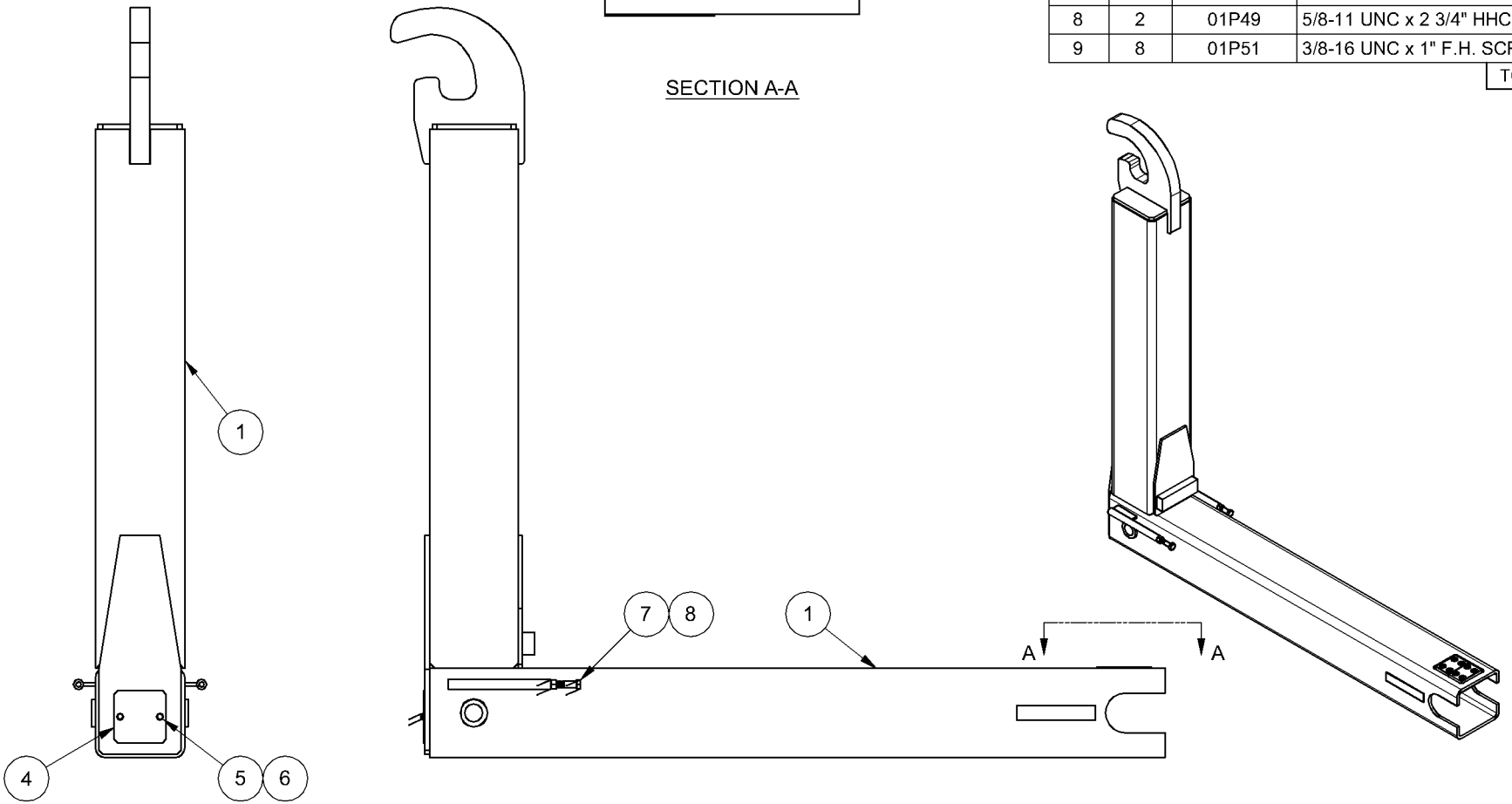
TITLE: ADJUSTABLE JIB SUB-ASSEMBLY

DRAWING NO.	MODEL NO.	REV
43H-64	SL-412	

PARTS PER 43H66 SUB-ASS'Y				
ITEM	QTY	PART #	DESCRIPTION	WT-lb/ea.
1	1	43H67	FIXED JIB WELDMENT	760.19
2	2	60H11	2 3/4" x 1/2" x 4 1/4"	0.21
3	2	61H90	WEAR BLOCK SPACER	0.40
4	1	62H11	PL 5 1/4" x 11 Ga x 5 1/4"	0.92
5	2	00755	3/8" LOCK WASHER	0.00
6	2	00P03	3/8-16 UNC x 3/4" HHCS	0.04
7	2	00P24	5/8-11 UNC HEX NUT	0.08
8	2	01P49	5/8-11 UNC x 2 3/4" HHCS	0.30
9	8	01P51	3/8-16 UNC x 1" F.H. SCREW	0.04
			TOTAL	760.23



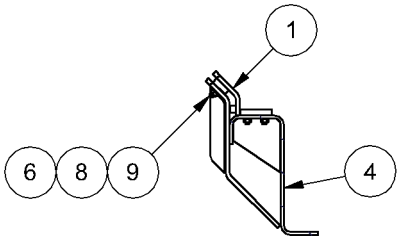
SECTION A-A



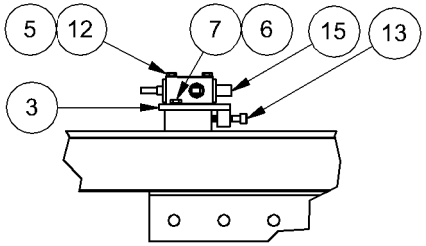
FIXED JIB SUB-ASSEMBLY (43H66)

SWAPLOADER U.S.A. LTD.

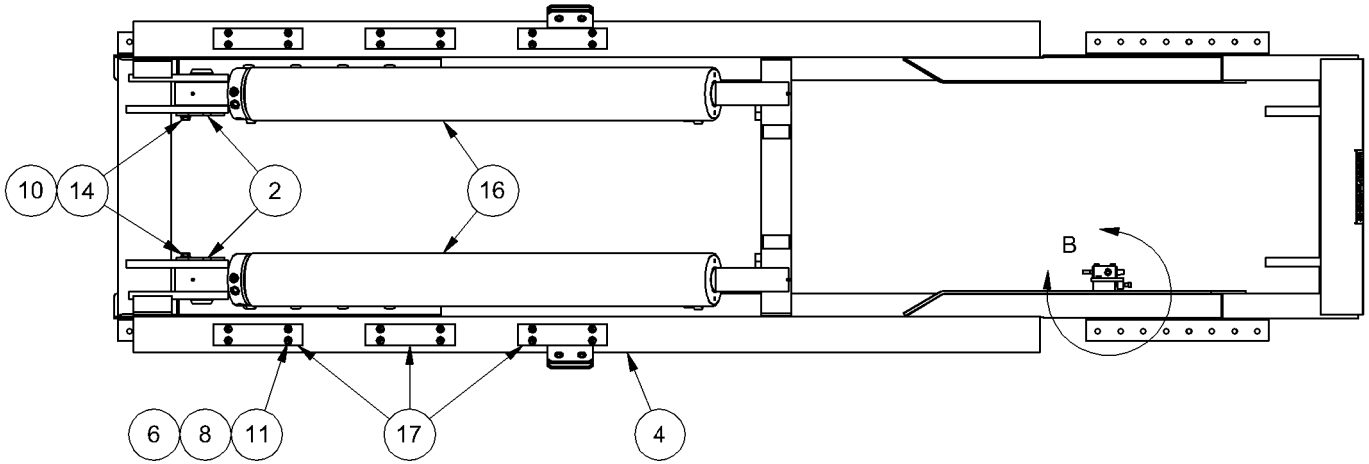
TITLE		
FIXED JIB SUB-ASSEMBLY		
DRAWING NO.	MODEL NO.	REV
43H-66	SL-412	

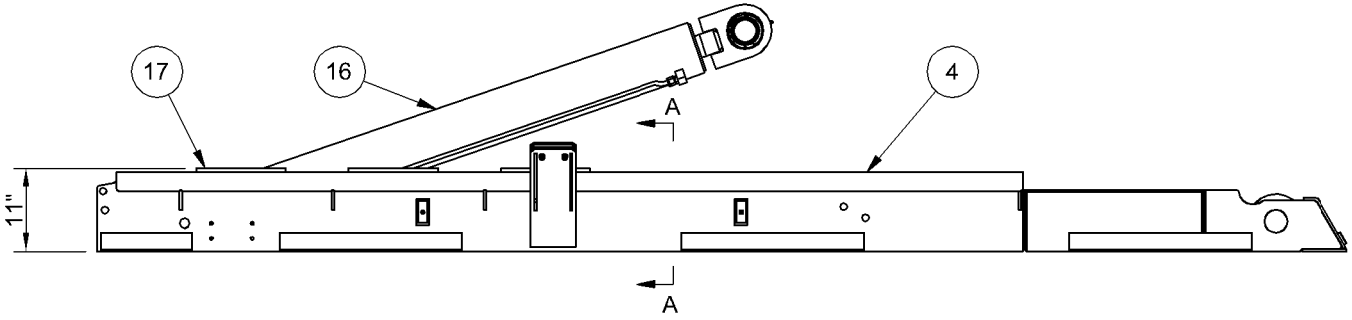


SECTION A-A



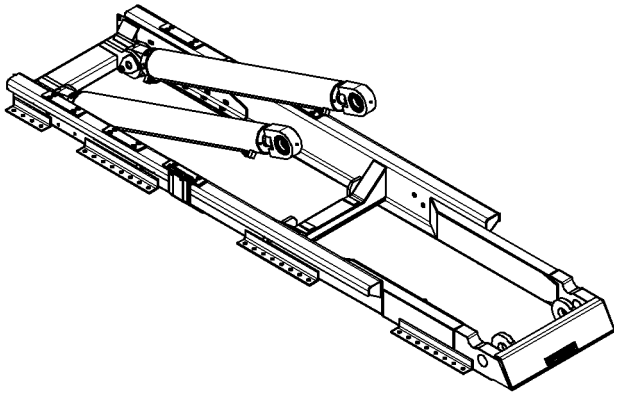
DETAIL B





MAINFRAME SUB-ASSEMBLY (43H72)

PARTS PER 43H72 SUB-ASSEMBLY				
ITEM	QTY	PART #	DESCRIPTION	WT-lb/ea.
1	2	41H81	FRONT GUIDE SHIM WDMNT	4.49
2	2	42H01	MAINFRAME PIN WDMNT	13.12
3	1	42H11	JIB LOCKOUT VALVE MOUNT	2.41
4	1	43H73	MAINFRAME WELDMENT	1098.44
5	2	00752	5/16" LOCK WASHER	0.00
6	30	00755	3/8" LOCK WASHER	0.00
7	2	00P13	3/8-16 UNC x 1 1/4" HHCS	0.05
8	28	00P14	3/8-16 UNC HEX NUT	0.02
9	4	00P44	3/8-16 UNC x 1 1/2" BOLT	0.06
10	2	00P56	5/8-11 UNC x 1 1/2" BOLT	0.19
11	24	00P68	3/8-16 UNC x 1 1/4" FLT HD	0.04
12	2	01P08	5/16-18 UNC x 2" HHCS	0.05
13	1	01P20	3/8-16 UNC x 1 3/4" SHCS	0.07
14	2	01P31	5/8Ø DISC-LOCK WASHER	0.03
15	1	21P28	HYD 2 WAY VALVE	2.35
16	2	22P24	6" x 56" STROKE x 3" HYD CYL	446.10
17	6	90P71	12" WEAR PAD	0.63
			TOTAL	2036.91



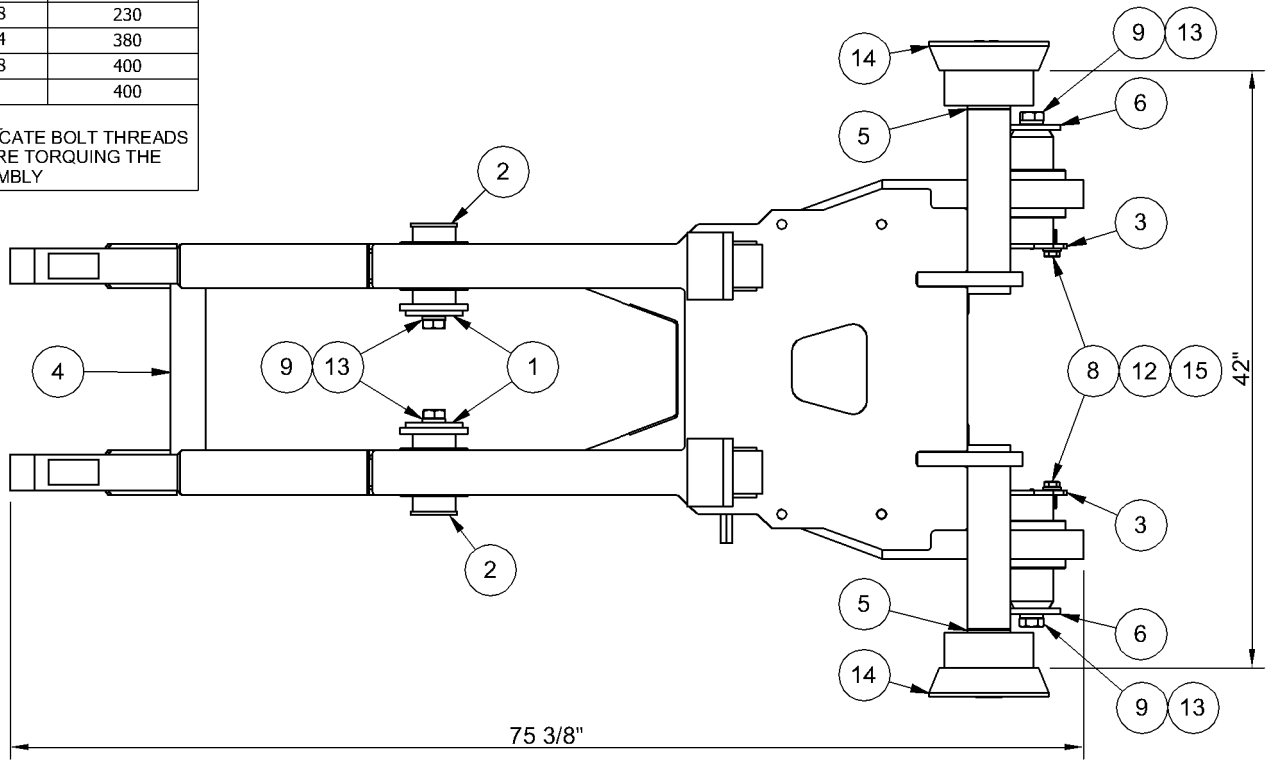
Notes
1.) SEE PAGE 4-4 OF MAINTENANCE SECTION FOR HYDRAULIC CYLINDER SERVICE PARTS

SWAPLOADER U.S.A. LTD.

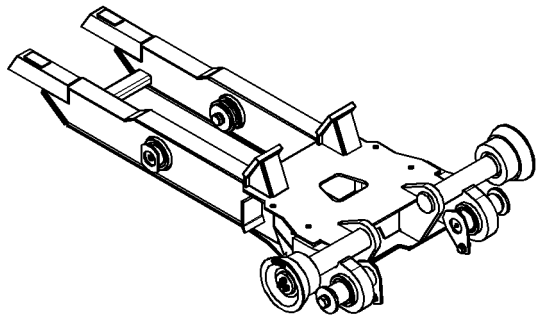
TITLE		
MAINFRAME SUB-ASSEMBLY		
DRAWING NO.	MODEL NO.	REV
43H-72	SL-412	

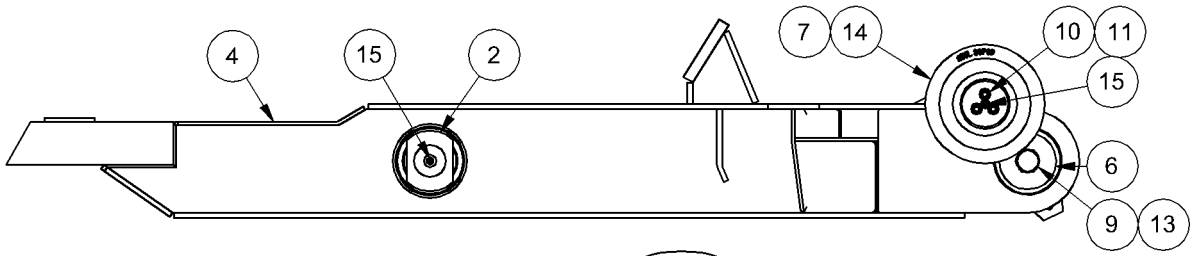
DISC-LOCK WASHER TORQUE SPEC'S	
BOLT SIZE	SAE GR 8 ASS'Y TORQUE (FT-LBS)
3/8	50
7/16	80
1/2	120
5/8	230
3/4	380
7/8	400
1	400

NOTE:
LUBRICATE BOLT THREADS BEFORE TORQUING THE ASSEMBLY



PARTS PER 43H69 SUB-ASSY				
ITEM	QTY	PART #	DESCRIPTION	MASS
1	2	40H71	PIN CAP WELDMENT	2.25
2	2	41H99	PIVOT PIN WELDMENT	11.86
3	2	42H10	MAIN PIVOT PIN WELDMENT	16.99
4	1	43H70	PIVOT JOINT WELDMENT	541.16
5	2	61H94	ROLLER SPACER	0.56
6	2	82H49	PLATE - PIN CAP	1.24
7	2	85H21	PL Ø3 1/4" x 1/2" x 3 1/4"	1.05
8	2	00P56	5/8-11 UNC x 1 1/2" BOLT	0.19
9	4	00P87	1-8 UNC x 2" HHCS (GR. 8)	0.71
10	6	01P25	7/16-14 UNC x 1 1/2" SHCS	0.08
11	6	01P26	7/16" LOCK WASHER	0.01
12	2	01P31	5/8Ø DISC-LOCK WASHER	0.03
13	4	01P34	1Ø DISC-LOCK WASHER	0.08
14	2	80P09	ROLLER ASSEMBLY	33.88
15	6	90P03	1/8" NPT ZERK	0.02
			TOTAL	681.05



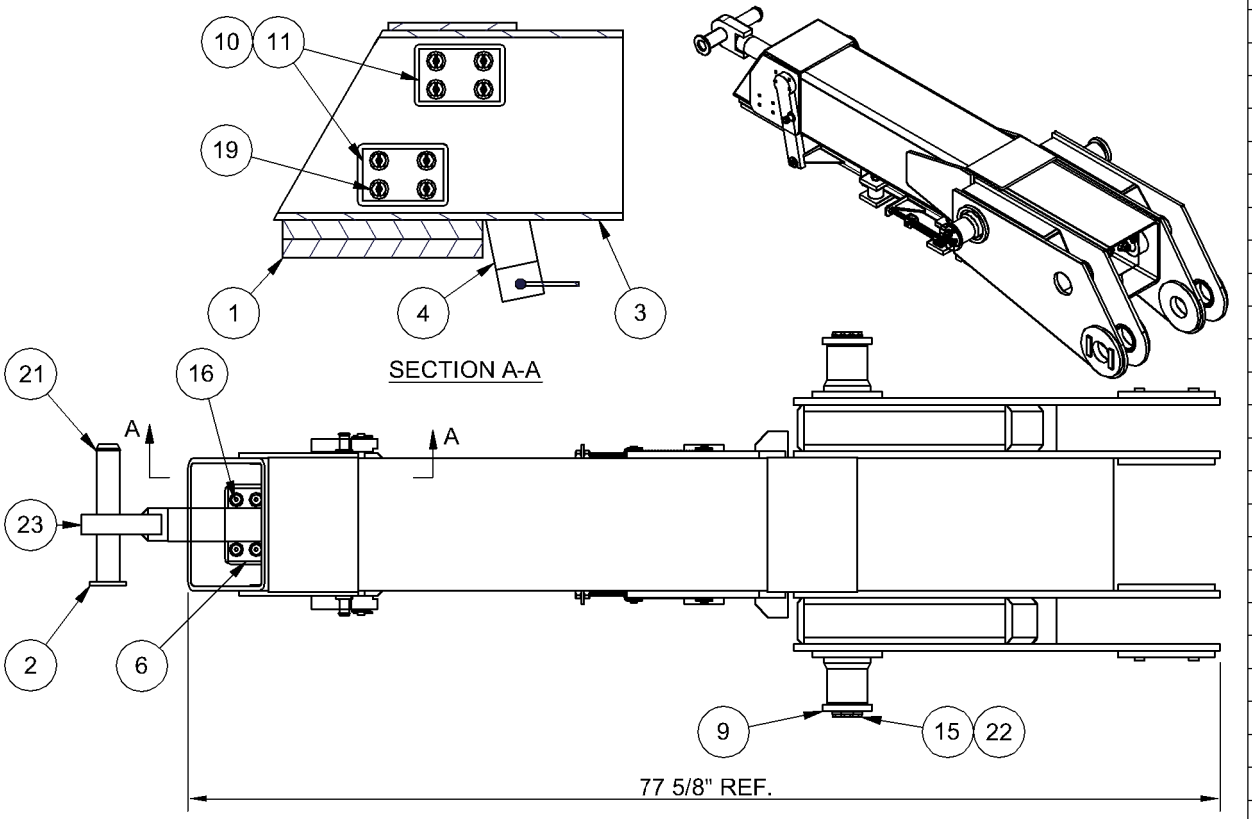


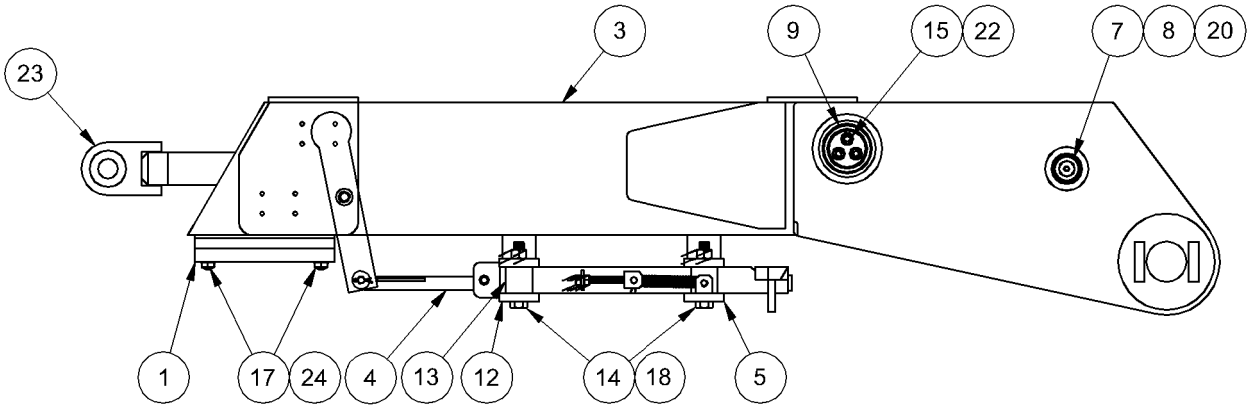
PIVOT JOINT SUB-ASSEMBLY' (43H69)

Notes
1.) SEE PAGE 4-6 OF MAINTENANCE SECTION FOR REPLACEMENT BEARINGS

SWAPLOADER U.S.A. LTD.

TITLE		
PIVOT JOINT SUB-ASSEMBLY		
DRAWING NO.	MODEL NO.	REV
43H-69	SL-412	





OUTER TUBE SUB-ASSEMBLY (43H60)

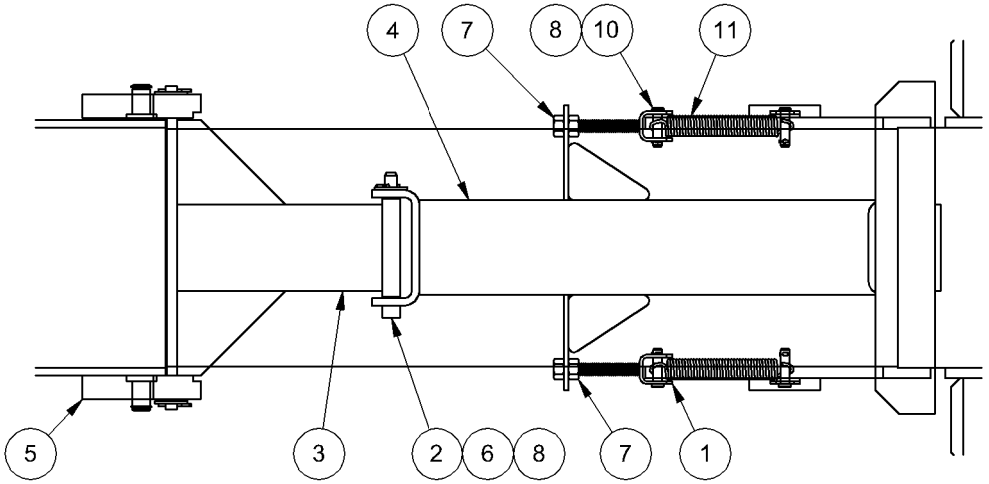
PARTS PER 43H60 SUB-ASSEMBLY

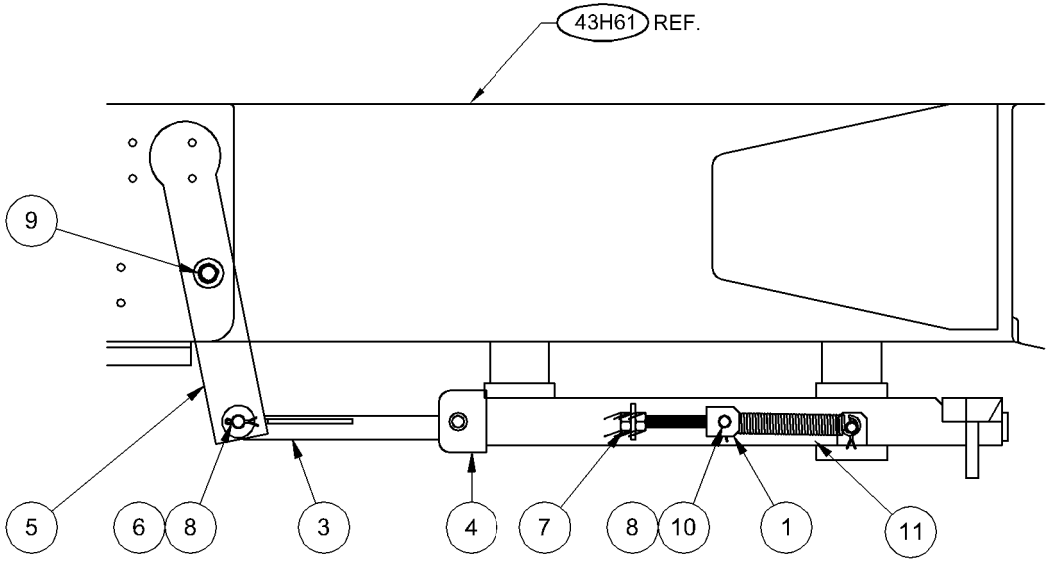
ITEM	QTY	PART #	DESCRIPTION	WT-lb./ea.
1	1	40H44	CLAMP PLATE WDMT	30.00
2	1	41H98	Ø1 3/4" CYLINDER PIN WDMT	7.33
3	1	43H61	OUTER TUBE WELDMENT	669.80
4	1	43H62	PIVOT LOCK SUB-ASSY	56.97
5	1	43H75	PIVOT LOCK SUB-WDMT	6.47
6	2	80H35	CLAMP LINER	0.28
7	2	81H20	CYLINDER PIN CAP	0.41
8	1	82H50	CYLINDER PIN 1-3/4	0.79
9	2	85H14	CYLINDER RETAINER	1.46
10	4	87H44	WEAR BLOCK	0.16
11	4	87H45	WEAR BLOCK SHIM	0.20
12	1	87H84	PIVOT LOCK CONNECTOR	4.61
13	4	87H85	PIVOT LOCK SPACER	1.58
14	4	00P16	3/4-10 UNC x 4 1/2" HHCS	0.67
15	6	00P31	1/2-13 UNC x 1 1/4" HHCS	0.10
16	8	00P68	3/8-16 UNC x 1 1/4" FHS	0.04
17	6	00P69	5/8-11 UNC x 2" HHCS	0.23
18	4	00P72	3/4-10 UNC LOCKING HEX NUT	0.13
19	16	00P79	3/8-16 UNC x 3/4" FHS	0.03
20	2	00P95	5/8-11 UNC x 1 1/4" FHSS	0.11
21	1	00P97	EXT RET RING FOR 1 3/4Ø	0.01
22	6	01P30	1/2Ø DISC-LOCK WASHER	0.02
23	1	22P25	HYD CYLINDER 4 X 30	196.27
24	6	00767	5/8" LOCK WASHER	0.01
			TOTAL	996.82

NOTE:
SEE PAGE 4-4 FOR HYDRAULIC CYLINDER SERVICE PARTS

SWAPLOADER U.S.A. LTD.

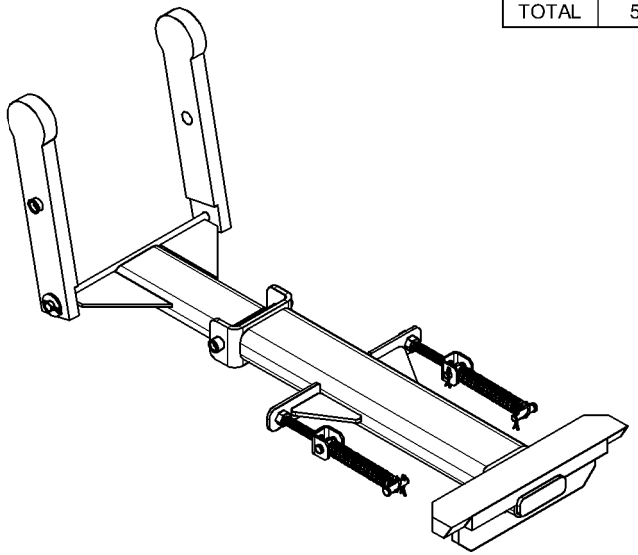
TITLE		
OUTER TUBE SUB-ASSEMBLY		
DRAWING NO.	MODEL NO.	REV
43H-60	SL-412	





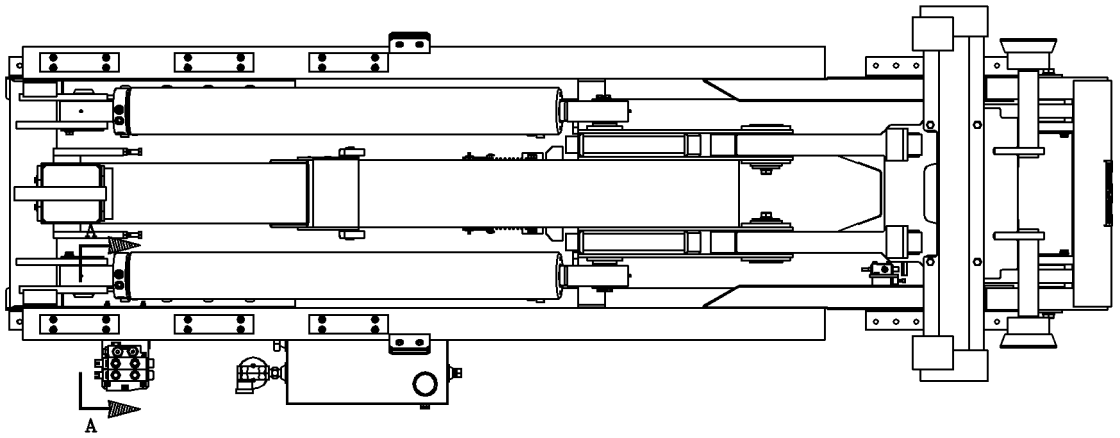
PIVOT LOCK SUB-ASSEMBLY (43H62)

PARTS PER 43H62 SUB-ASSEMBLY				
ITEM	QTY	PART #	DESCRIPTION	WT-lb./ea.
1	2	40H38	TAKE UP	0.30
2	1	40H42	CONNECTION BAR PIN	0.36
3	1	42H09	CONNECTION BAR WELDMENT	4.33
4	1	43H63	PIVOT LOCK WELDMENT	33.71
5	2	81H51	RELEASE LEVER	8.42
6	3	00772	1/2" STD. WASHER	0.04
7	4	00P02	1/2-13 UNC HEX NUT	0.04
8	7	00P26	1/8" x 1" COTTER PIN	0.00
9	2	00P28	EXT RET RING FOR 3/4Ø	0.00
10	4	00P94	3/8" x 1 1/2" CLEVIS PIN	0.05
11	2	90P04	7/8" x 6" SPRING	0.30
			TOTAL	56.97



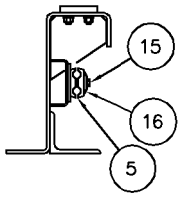
SWAPLOADER U.S.A. LTD.

TITLE		
PIVOT LOCK SUB-ASSEMBLY		
DRAWING NO.	MODEL NO.	REV
43H-62	SL-412	

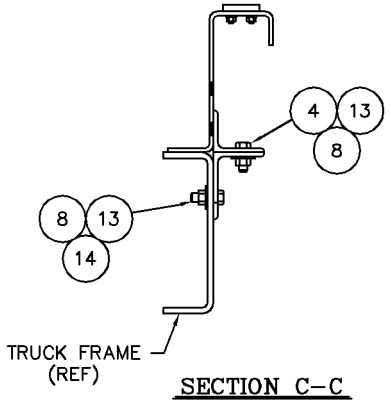


PARTS PER 43H97				
ITEM	QTY	PART	DESCRIPTION	WT-lb/ea
1	1	43H99	PARTS & OP MANUAL	--
2	1	43H98	DECAL ASSEMBLY	--
3	8	88H21	CHASSIS MOUNT BRACKET	3.27
4	16	00P56	5/8-11X1 1/2 BOLT	0.18
5	2	10P66	HOSE CLAMP	0.04
6	3	00752	5/16 WASHER	0.01
7	4	00755	3/8 LOCK WASHER	0.01
8	36	00785	5/8 WASHER	0.04
9	4	00P14	3/8-16 HEX NUT	0.02
10	3	00P19	5/16-18 X 2 3/4 HHCS	0.06
11	3	00P20	5/16-18 HEX NUT	0.01
12	4	00P44	3/8-16 X 1 1/2 BOLT	0.07
13	36	00P55	5/8 LOCK NUT	0.11
14	20	00P69	5/8 X 2 HHCS	0.27
15	2	10P28	5/16 X 1 1/4 HHCS	0.03
16	2	10P29	COVER PLATE	0.10
			TOTAL	40.82

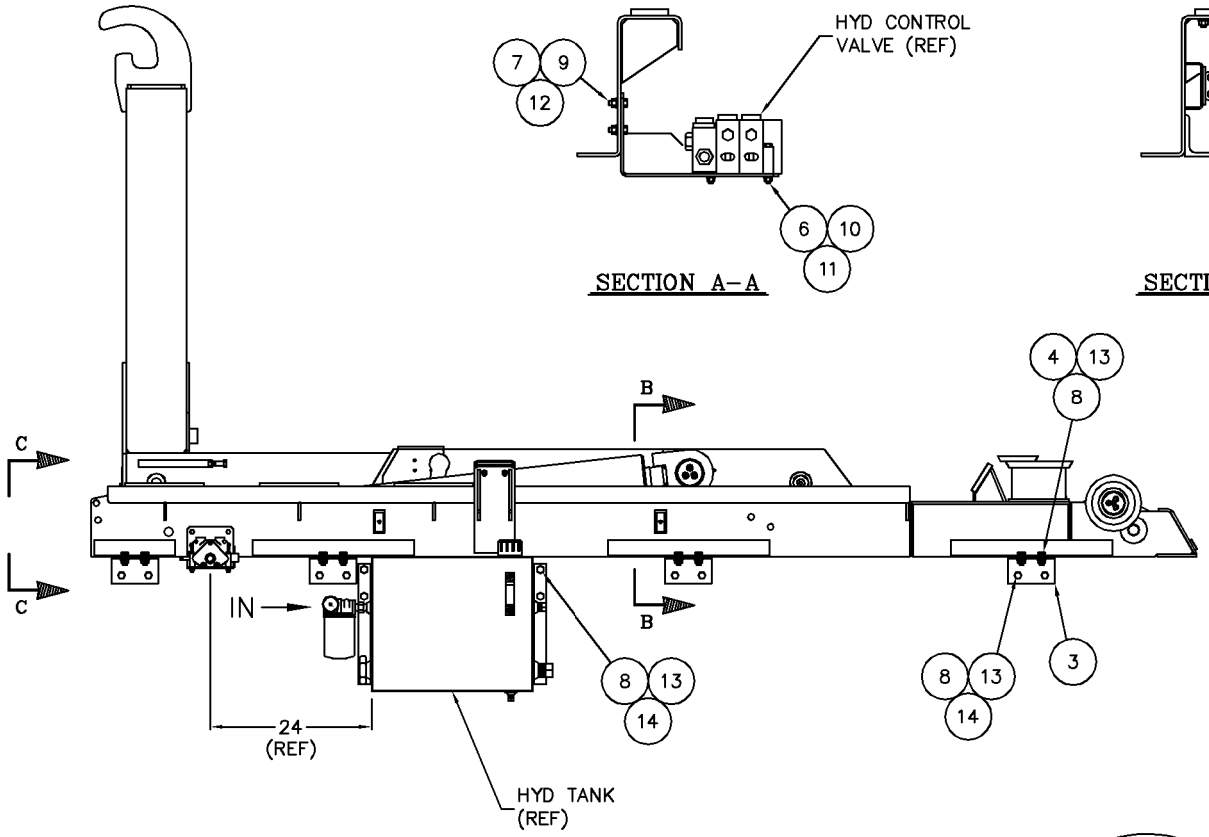
SECTION A–A



SECTION B–B



SECTION C–C



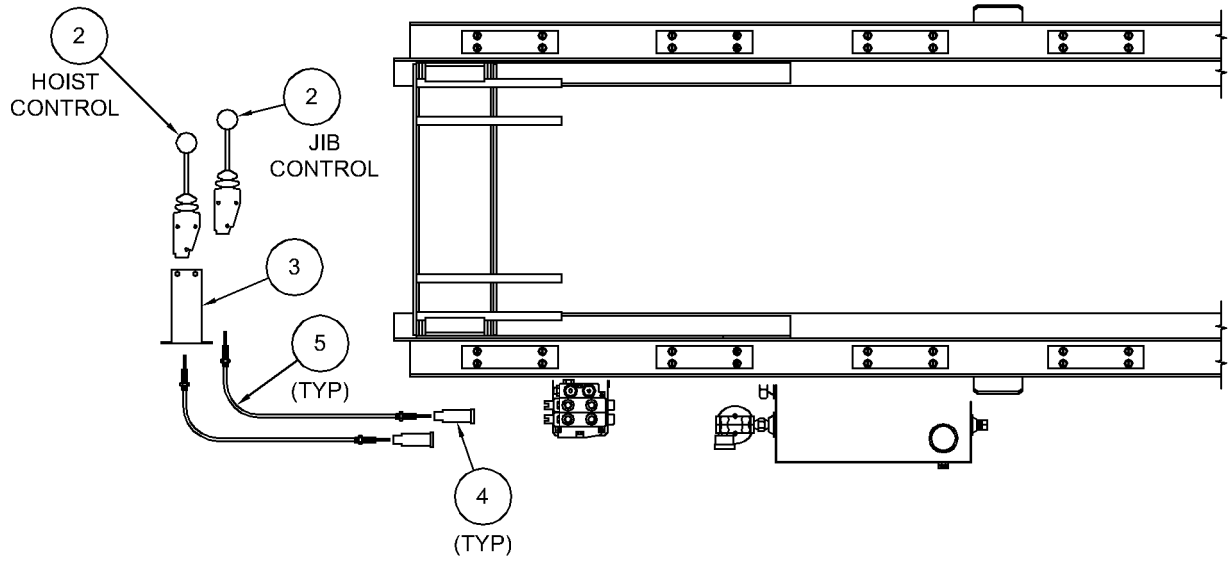
HOIST INSTALLATION KIT, SL–412 (43H97)

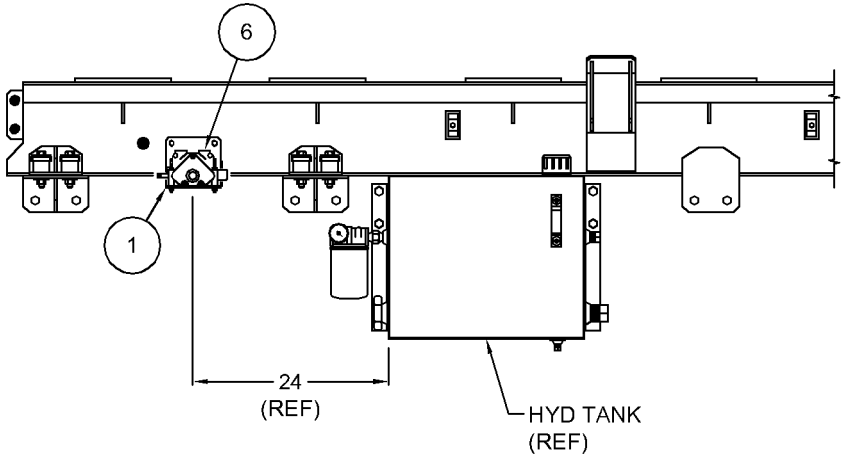
SWAPLOADER U.S.A. LTD.

TITLE		
HOIST INSTALLATION KIT		
DRAWING NO.	MODEL NO.	REV
43H-97	SL-412	

PARTS LIST

ITEM	QTY	P/N	DESCRIPTION	WT-lb/ea	REMARKS
1	ONE	41H01	VALVE MOUNT BRACKET WDMT	7.12	
2	2	20P08	REMOTE VALVE CONTROL HANDLE	2.80	
3	ONE	20P09	CONTROL HANDLE MOUNT CONSOLE	4.05	
4	2	20P10	BONNET CONNECTION KIT	0.50	
5	2	20P40	CONTROL CABLE 96" LG	2.00	
6	ONE	20P88	HYD VALVE ASS'Y	27.00	
				50.71	TOTAL





NOTE:
A 2 SECTION CONTROL VALVE ASS'Y IS SHOWN. A 3 SECTION CONTROL VALVE ASS'Y IS REQUIRED WHEN A STABILIZER IS UTILIZED

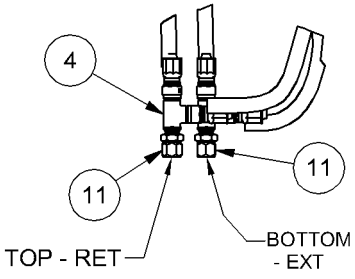
SWAPLOADER™ U.S.A. LTD.

MANUAL CONTROL ASS'Y - 2 SECTION

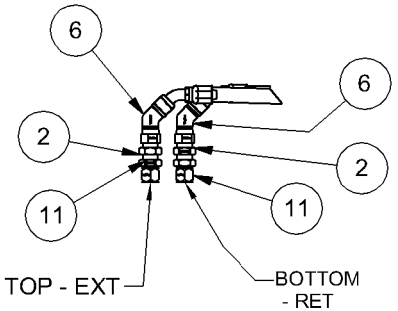
SL-330/400/406/412

90H57 ~ REV A

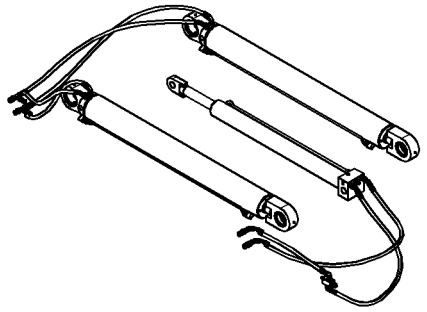
PT-90H57.dwg 07/10/09 14:58



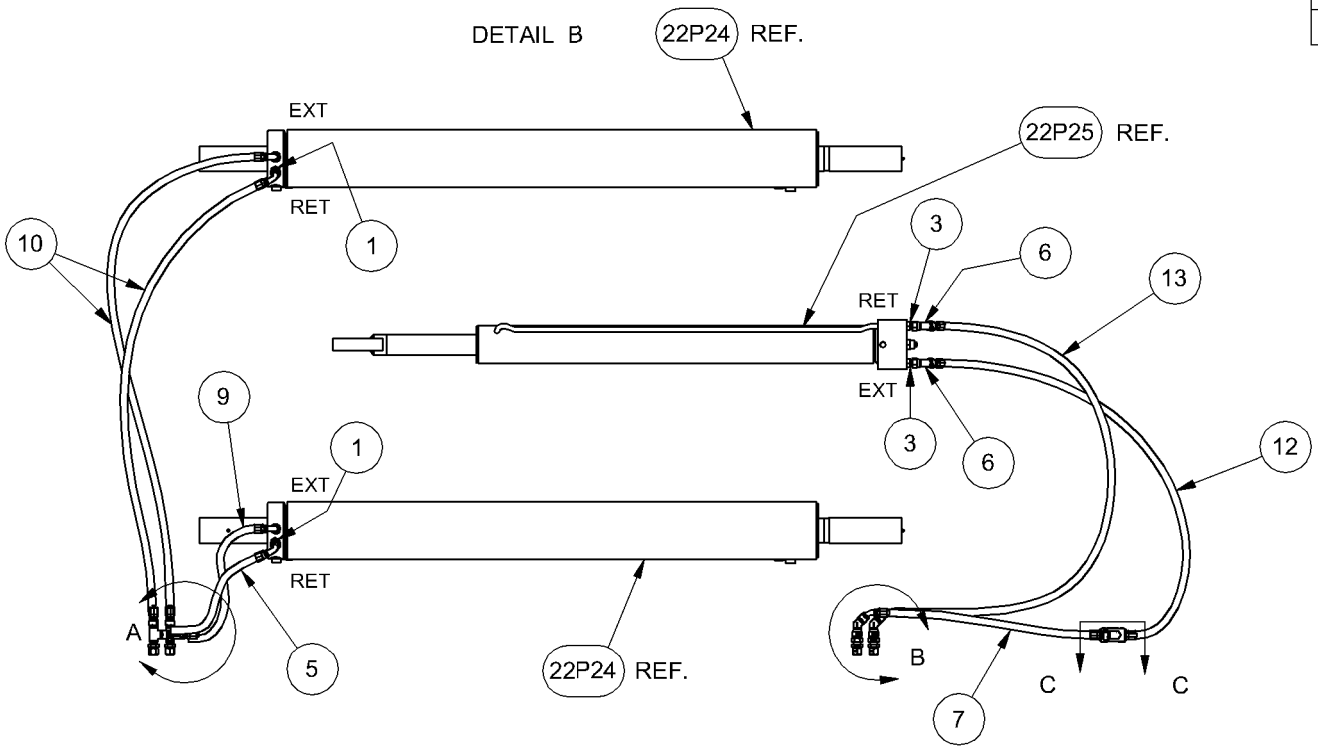
DETAIL A

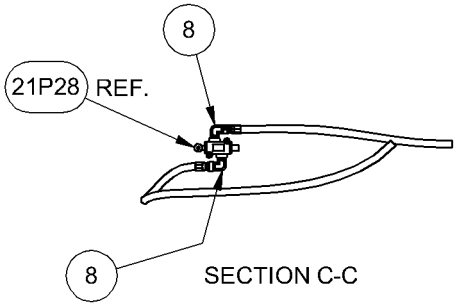


DETAIL B



PARTS PER 91H17				
ITEM	QTY	PART	DESCRIPTION	WT-lb/ea
1	4	10P39	ADP HYD 08MJ/08MB	0.14
2	2	11P02	BHD HYD 10MJ/10MB	0.40
3	2	11P06	ADP HYD 10MJ/10MB	0.21
4	2	11P27	BHD TEE HYD 10MJ	0.63
5	1	12P86	HOSE ASSY 1/2 X 20	1.21
6	4	12P09	ADP HYD 10FJ/10MJ45	0.31
7	1	13P21	HOSE ASSY 1/2 X 32	1.60
8	2	12P69	ADP HYD 10MJ/08MB90	0.39
9	1	12P87	HOSE ASSY 1/2 X 21	1.26
10	1	12P88	HOSE ASSY1/2 X 47	2.24
11	4	13P15	10MJ CAP	0.10
12	1	13P18	HOSE ASSY 1/2 X 79	2.92
13	1	13P19	HOSE ASSY 1/2 X 113	4.76
			TOTAL	19.45



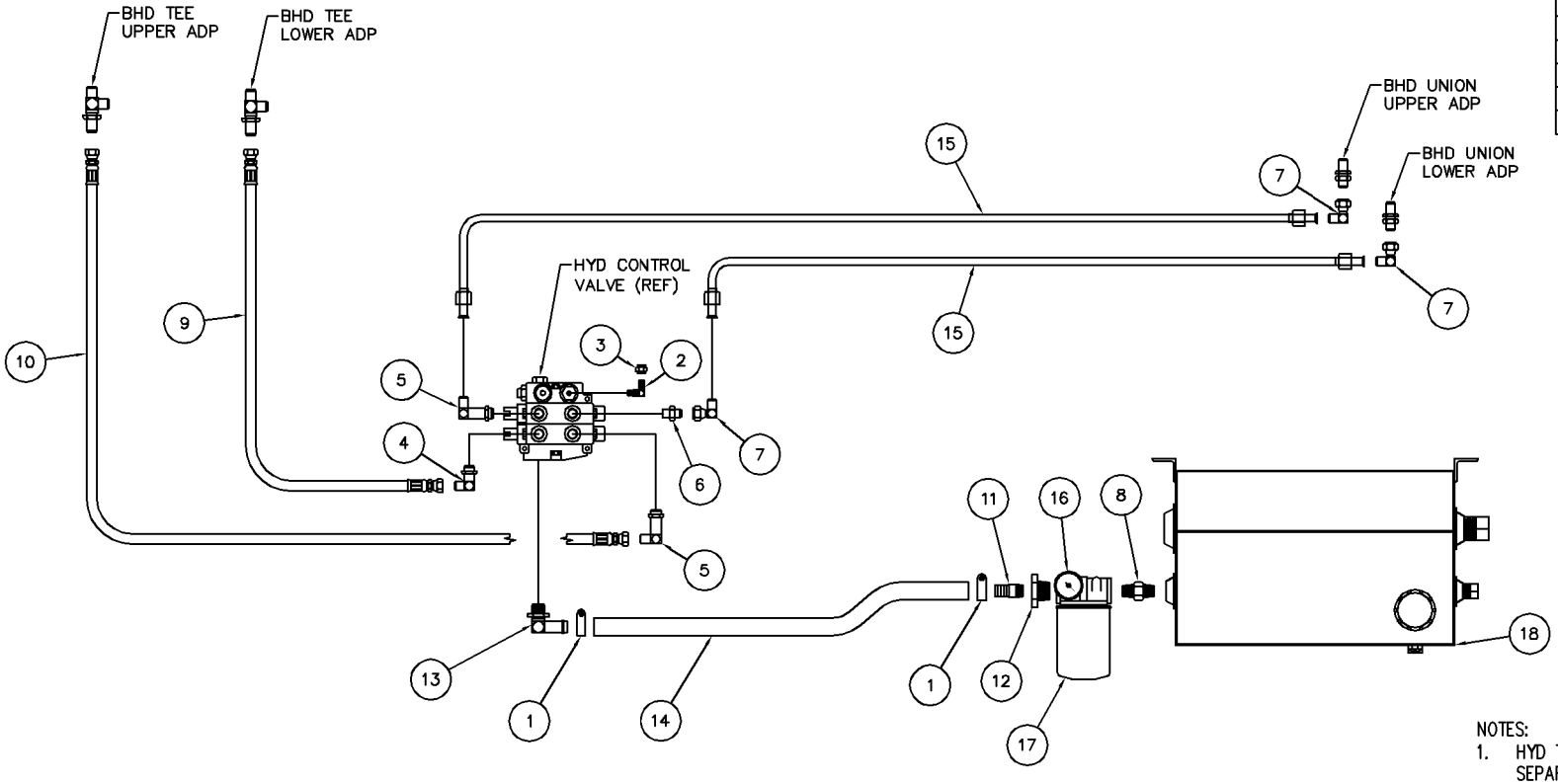


HYD SUB-ASSY-BASE CYL CIRCUIT (91H17)

Notes
1.) SEE PAGES 4-4, 4-5 OF MAINTENANCE SECTION FOR HYDRAULIC SERVICE PARTS

SWAPLOADER U.S.A. LTD.

TITLE		
HYD SUB-ASSY BASE CYL CIRCUIT		
DRAWING NO.	MODEL NO.	REV
91H-17	SL-412	



HYD SUB-ASSY, CHASSIS TANK CIRCUIT (91H18)

PARTS PER 91H18				
ITEM	QTY	PART		WT-lb/ea
1	2	10P21	T-BOLT CLAMP, 1 1/2ø	0.10
2	1	10P37	ADP, HYD MJIC / MP 90°	0.30
3	1	10P38	ADP, HYD FMJIC CAP	0.10
4	1	11P04	ADP, HYD MJIC / ORB 90°	0.40
5	2	11P05	ADP, HYD MJIC / ORB LL 90°	0.40
6	1	11P06	ADP, HYD MJIC / ORB	0.30
7	3	11P07	ADP, HYD MJIC/ FMJIC SVL 90°	0.40
8	1	11P78	ADP, HYD MP / MP	0.70
9	1	13P08	HOSE ASSY HP 1/2 X 23	1.35
10	1	11P98	HOSE ASS'Y 1/2 H.P. x 28	1.40
11	1	12P19	ADP, HYD HOSE INS / MP	0.30
12	1	12P20	ADP, HYD MP / FP	0.30
13	1	12P26	ADP, HYD HOSE INS / ORB 90°	0.60
14	1	12P31	HOSE 1 LP x 30	1.65
15	2	13P20	HYD TUBING-REAR	3.74
16	1	20P64	FILTER INDICATOR GAUGE	–
17	1	20P61	HYD FILTER	4.50
18	1	20P86	HYD TANK - 30 GAL	73.00
			TOTAL	94.58

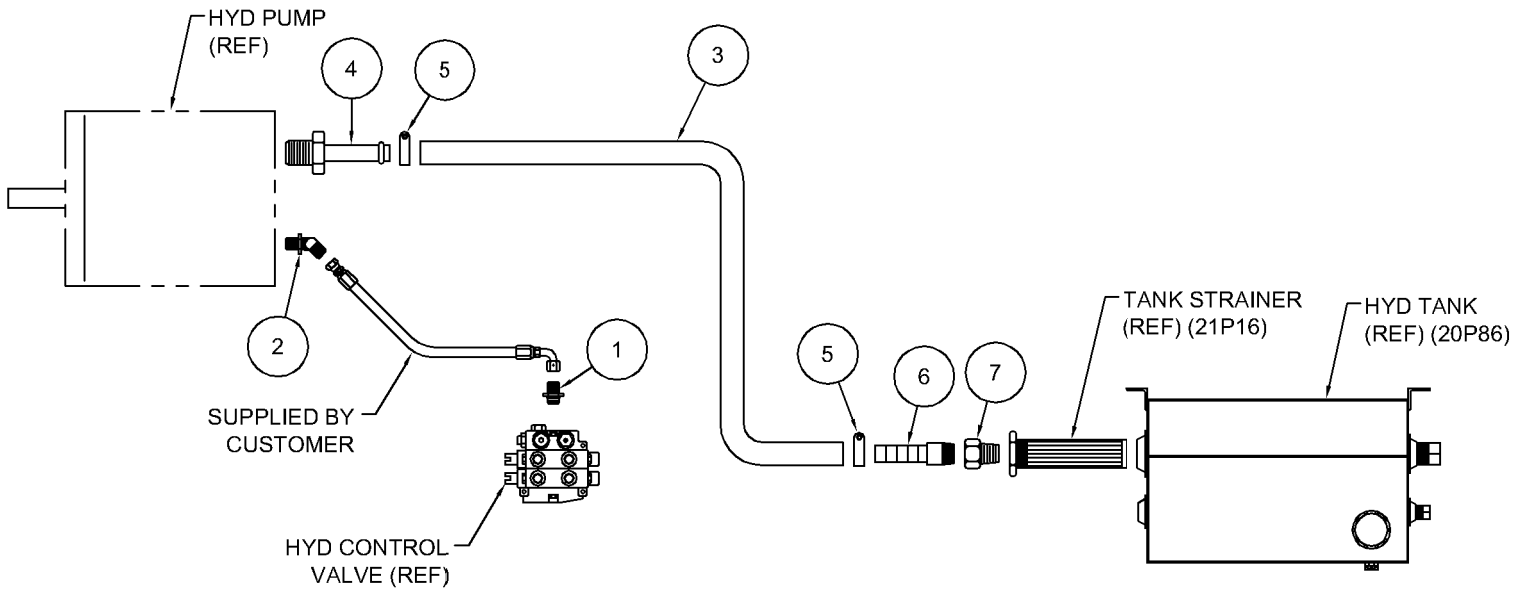
NOTES:
1. HYD TANK ASSY CONSISTS OF TANK WELDMENT WITH SEPARATE BOX CONTAINING TANK MOUNTED STRAINER, SIGHT GAUGE, FILLER/BREATHER CAP, MAGNETIC DRAIN PLUG AND PORT PLUGS.

SWAPLOADER™ U.S.A. LTD.

TITLE: HYD SUB-ASSY TANK CIRCUIT

DRAWING NO.	MODEL NO.	REV
91H-18	SL-412	

PARTS LIST					
ITEM	QTY	P/N	DESCRIPTION	WT-lb/ea	REMARKS
1	ONE	10P90	ADP, HYD MJIC / ORB	0.40	6400-12
2	ONE	10P91	ADP, HYD MJIC / ORB 45°	0.50	6802-12-16
3	ONE	11P71	HOSE 1 1/2 LP x 120	9.60	
4	ONE	11P72	ADP, HYD HOSE INS / ORB	0.60	4604-24-20
5	2	11P77	T-BOLT CLAMP, 2ø	0.15	TBC-200
6	ONE	11P95	ADP, HYD HOSE INS / MP	0.40	STC-20
7	ONE	12P48	ADP, HYD MP / FP	0.60	2 x 1 1/2
				12.40	TOTAL

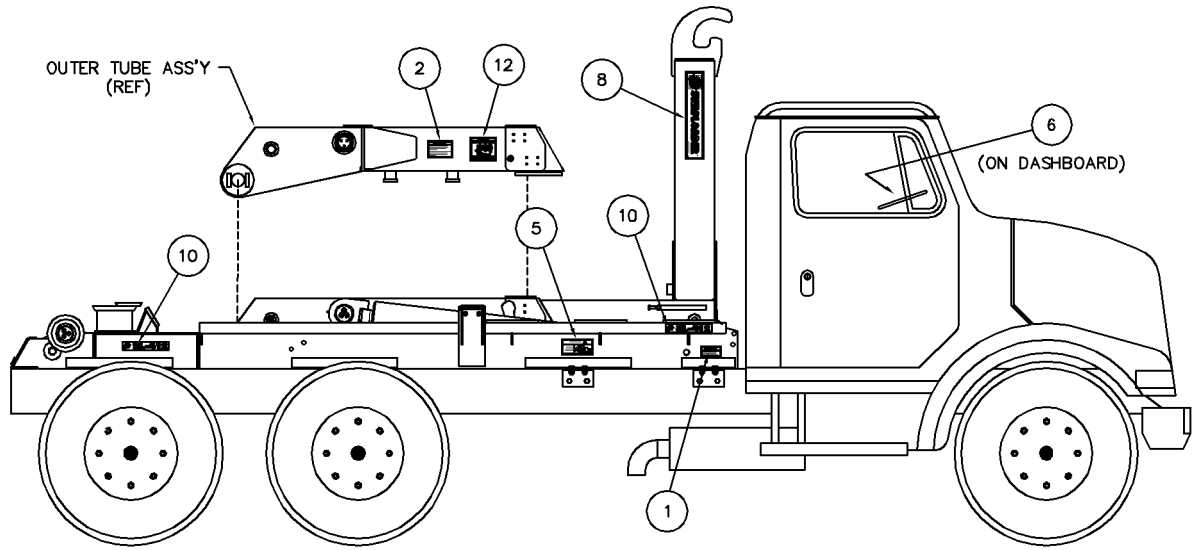


SWAPLOADER™ U.S.A. LTD.

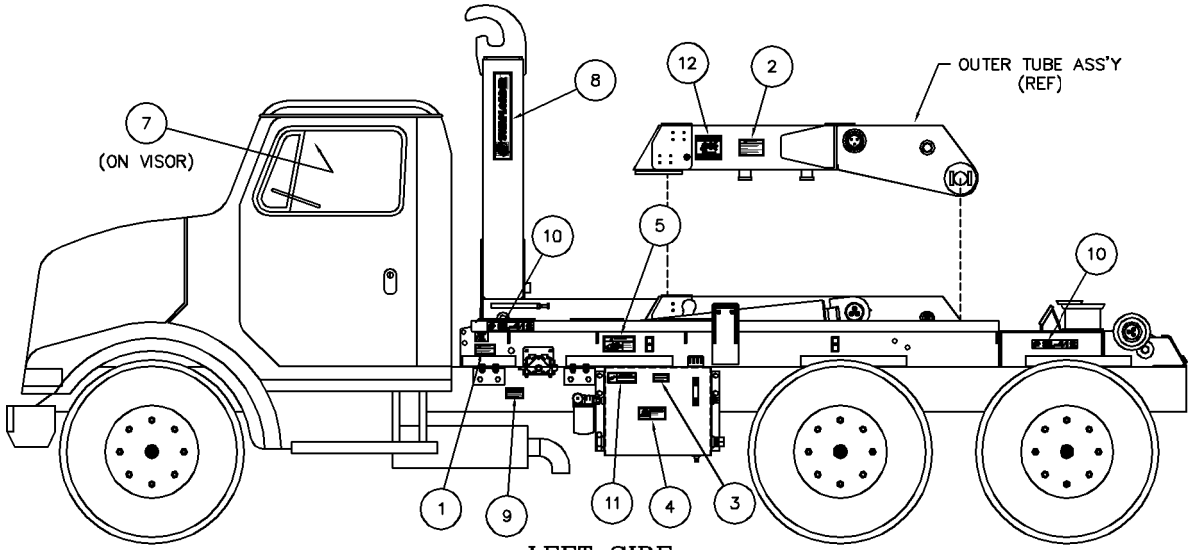
TITLE
HYD SUB-ASSY PUMP CIRCUIT

DRAWING NO.	MODEL NO.	REV
91H04	SL-330/400/406/412	

PT-91H04.dwg 11/17/14 08:45



RIGHT SIDE



LEFT SIDE

DECAL ASSEMBLY SL-412 (43H98)

PARTS PER 43H98

ITEM	QTY	PART	DECAL DESCRIPTION	WT-lb/ea
1	2	90P07	OPER & SERVICE MANUAL	--
2	2	90P08	CAUTION HOIST BODY	--
3	1	90P09	HYDRAULIC OIL SPEC	--
4	1	90P10	HYD OIL FLAMMABLILITY	--
5	2	90P11	WARNING DANGER	--
6	1	90P12	LEVER CONTROL	--
7	1	90P13	SAFETY INSTRUCTIONS	--
8	2	90P14	SWAPLOADER	--
9	1	90P18	RELIEF VALVE	--
10	4	91P10	SL-412	--
11	1	90P78	HIGH PRESSURE FLUID	--
12	2	91P06	LUBRICATION POINTS	--
			TOTAL	--

SWAPLOADER™ U.S.A. LTD.

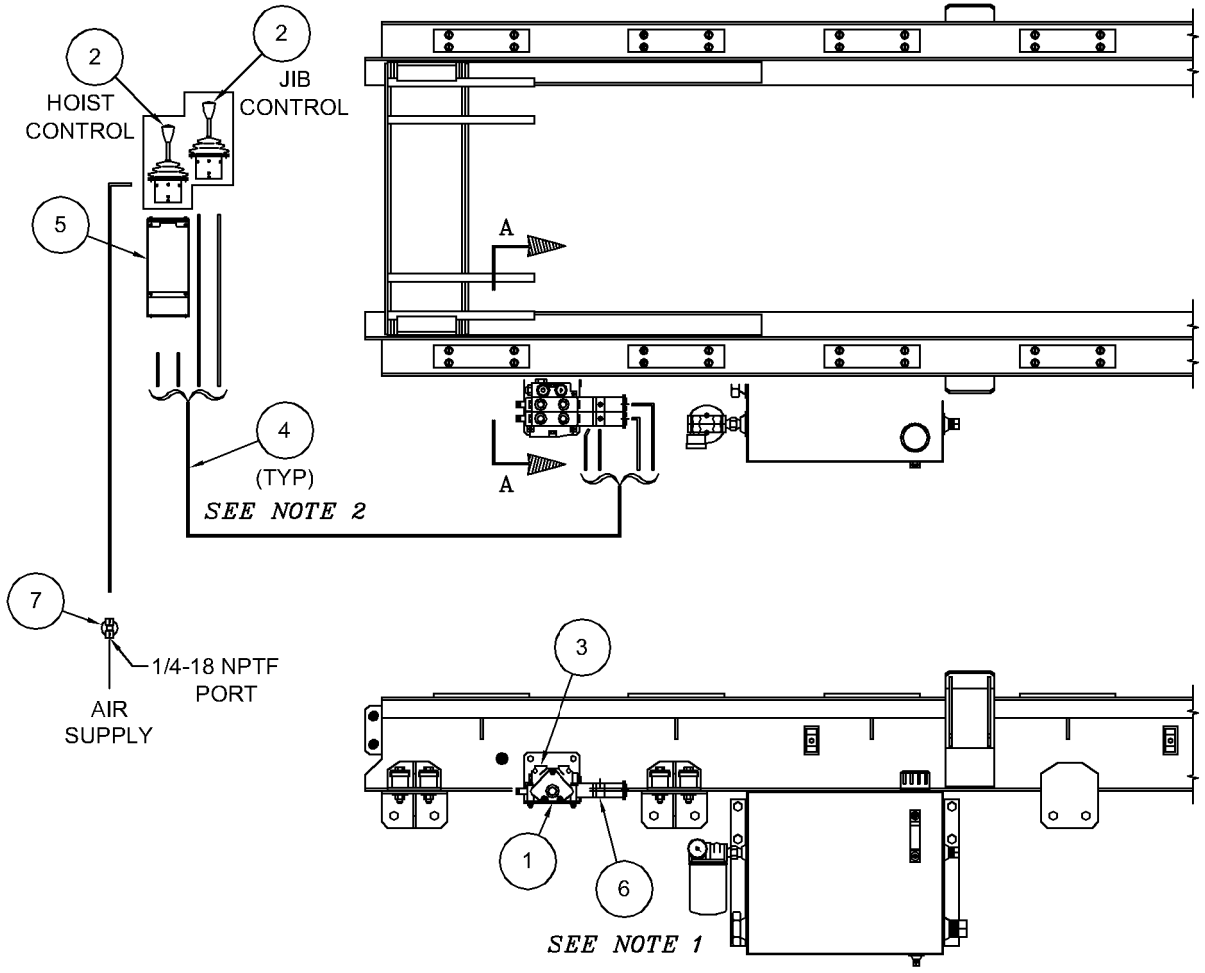
TITLE

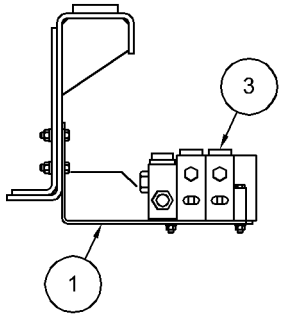
DECAL ASSEMBLY

DRAWING NO.	MODEL NO.	REV
43H-98	SL-412	

OPTIONS

PARTS LIST					
ITEM	QTY	P/N	DESCRIPTION	WT-lb/ea	REMARKS
1	ONE	41H01	VALVE MOUNT BRACKET	7.12	
2	ONE	20P72	CONTROL HANDLE ASS'Y	1.60	
3	ONE	20P88	HYD CONTROL VALVE ASS'Y	27.00	
4	ONE	12P94	AIR LINE KIT	1.40	
5	ONE	51H27	AIR CONTROL CONSOLE ASS'Y	6.23	
6	2	20P95	HYD VALVE SECTION AIR SHIFT KIT	1.42	
7	ONE	20P74	AIR PRESSURE PROTECTION VALVE	0.59	WM778A
				46.78	TOTAL





SECTION A–A

NOTE:
1. 20P95 AIR SHIFT KIT TO BE INSTALLED ON HYD CONTROL VALVE BY HOIST INSTALLER. REFERENCE INSTALLATION INSTRUCTIONS INCLUDED WITH THE AIR SHIFT KIT.
2. SEE DRAWING 90H60 FOR AIR SHIFT KIT PLUMBING DIAGRAM.

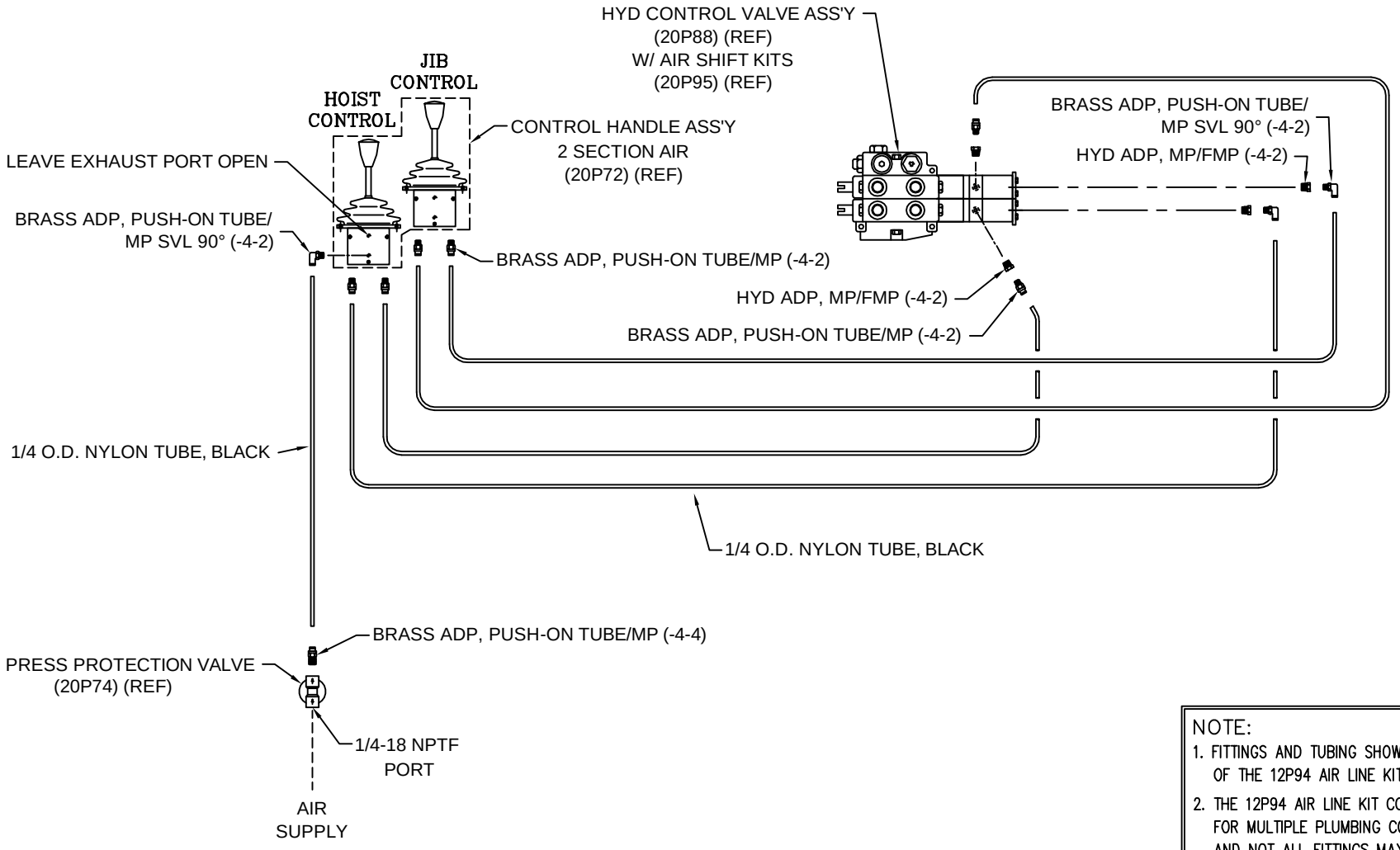
SWAPLOADER™ U.S.A. LTD.

AIR CONTROL ASS'Y - 2 SECTION

SL-330/400/406/412

90H58 ~ REV C

FT-90H58.dwg 07/10/09 15:10



NOTE:

1. FITTINGS AND TUBING SHOWN ARE PART OF THE 12P94 AIR LINE KIT.
2. THE 12P94 AIR LINE KIT CONTAINS FITTINGS FOR MULTIPLE PLUMBING CONFIGURATIONS AND NOT ALL FITTINGS MAY BE UTILIZED.

SWAPLOADER™ U.S.A. LTD.

AIR CIRCUIT, CONTROL VALVE - 2 SECTION

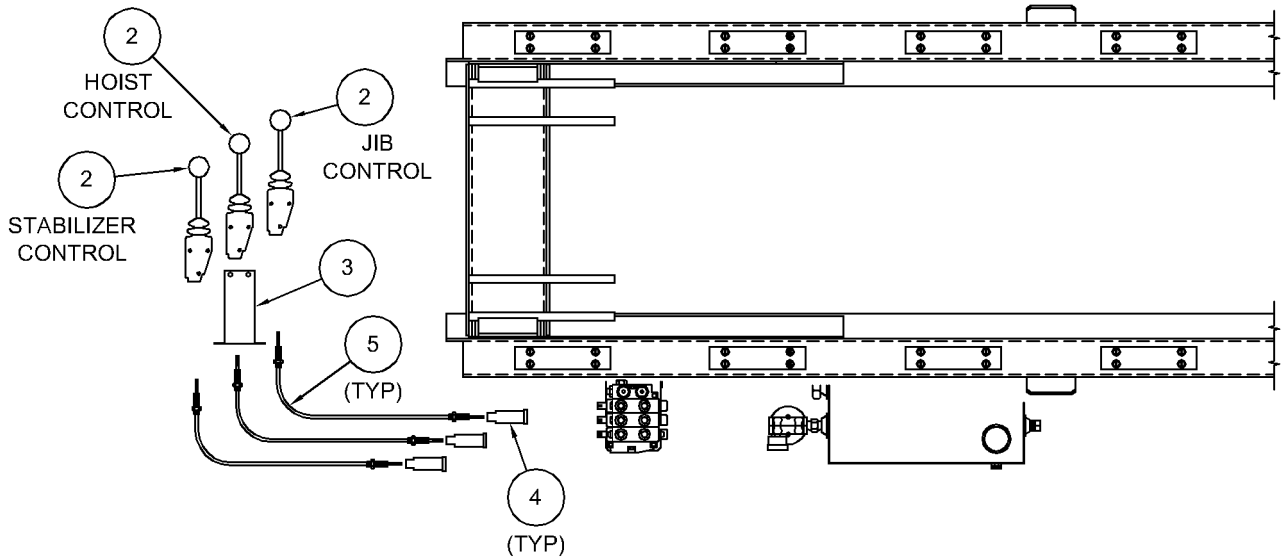
SL-330/400/406

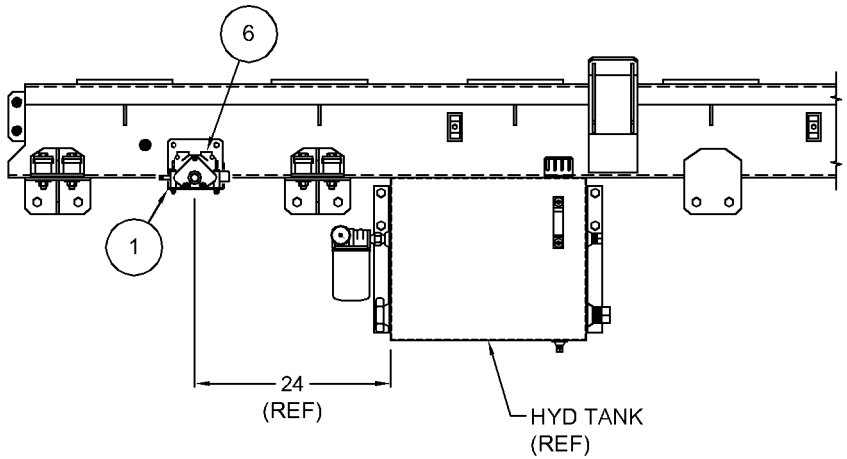
90H60 ~ REV A

PT-90H60.dwg 07/16/09 15:28

PARTS LIST

ITEM	QTY	P/N	DESCRIPTION	WT-lb/ea	REMARKS
1	ONE	41H83	VALVE MOUNT BRACKET WDMT	7.74	
2	3	20P08	REMOTE VALVE CONTROL HANDLE	2.80	
3	ONE	20P78	CONTROL HANDLE MOUNT CONSOLE	4.75	
4	3	20P10	BONNET CONNECTION KIT	0.50	
5	3	20P40	CONTROL CABLE 96" LG	2.00	
6	ONE	21P89	HYD VALVE ASS'Y, 3 SECTION	36.50	
				64.89	TOTAL





SWAPLOADER™ U.S.A. LTD.

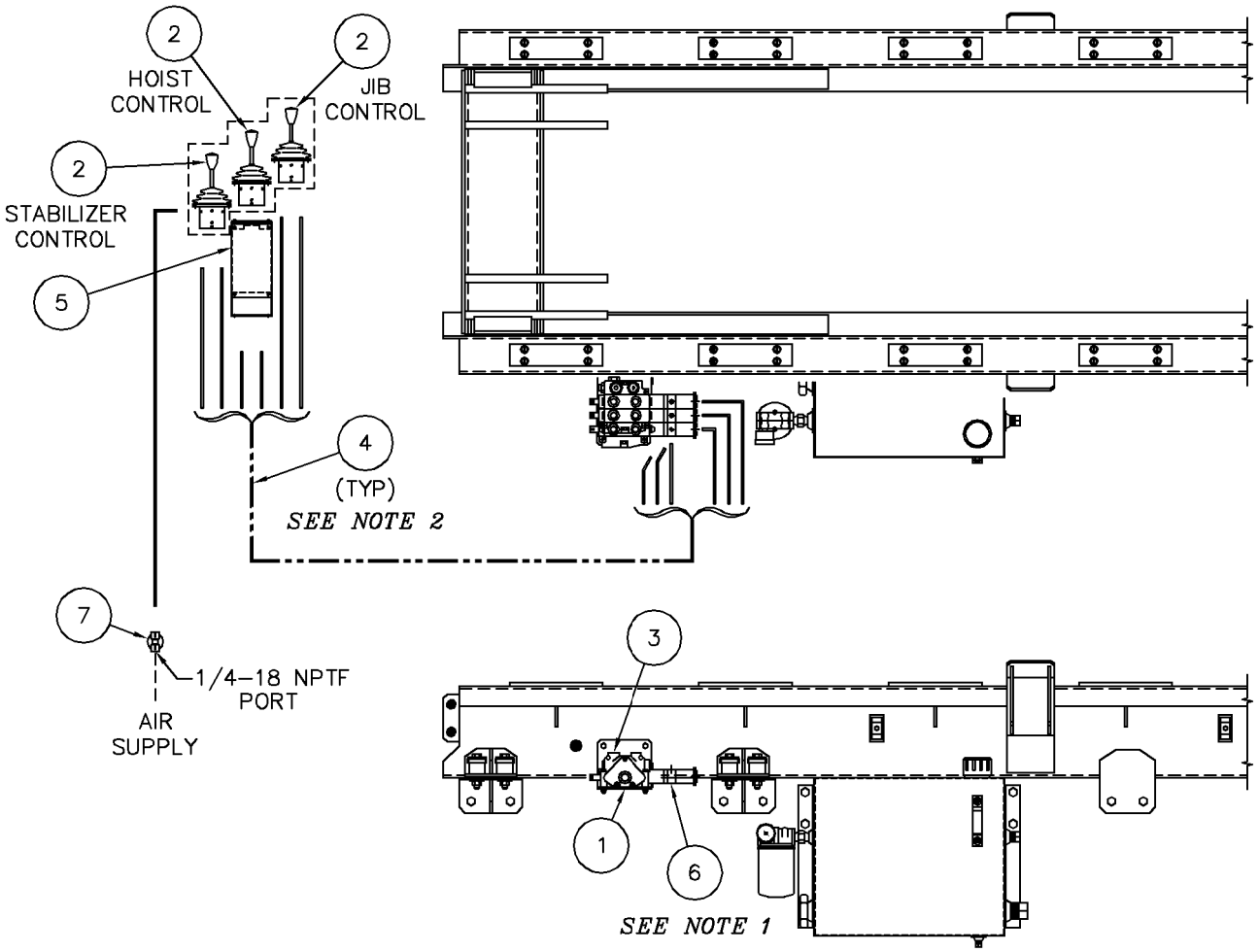
MANUAL CONTROL ASS'Y - 3 SECTION

SL-330/400/406/412

90H68 ~ REV B

FT-90H68.dwg 07/15/09 15:45

PARTS LIST					
ITEM	QTY	P/N	DESCRIPTION	WT-lb/ea	REMARKS
1	ONE	41H83	VALVE MOUNT BRACKET	7.74	
2	ONE	20P73	CONTROL HANDLE ASS'Y	2.40	
3	ONE	21P89	HYD CONTROL VALVE ASS'Y	35.50	
4	ONE	12P94	AIR LINE KIT	1.40	
5	ONE	51H37	AIR CONTROL CONSOLE ASS'Y	6.96	
6	3	20P95	HYD VALVE SECTION AIR SHIFT KIT	1.42	
7	ONE	20P74	AIR PRESSURE PROTECTION VALVE	0.59	WM778A
				58.85	TOTAL



NOTE:

1. 20P95 AIR SHIFT KIT TO BE INSTALLED ON HYD CONTROL VALVE BY HOIST INSTALLER. REFERENCE INSTALLATION INSTRUCTIONS INCLUDED WITH THE AIR SHIFT KIT.
2. SEE DRAWING 90H45 FOR AIR SHIFT KIT PLUMBING DIAGRAM.

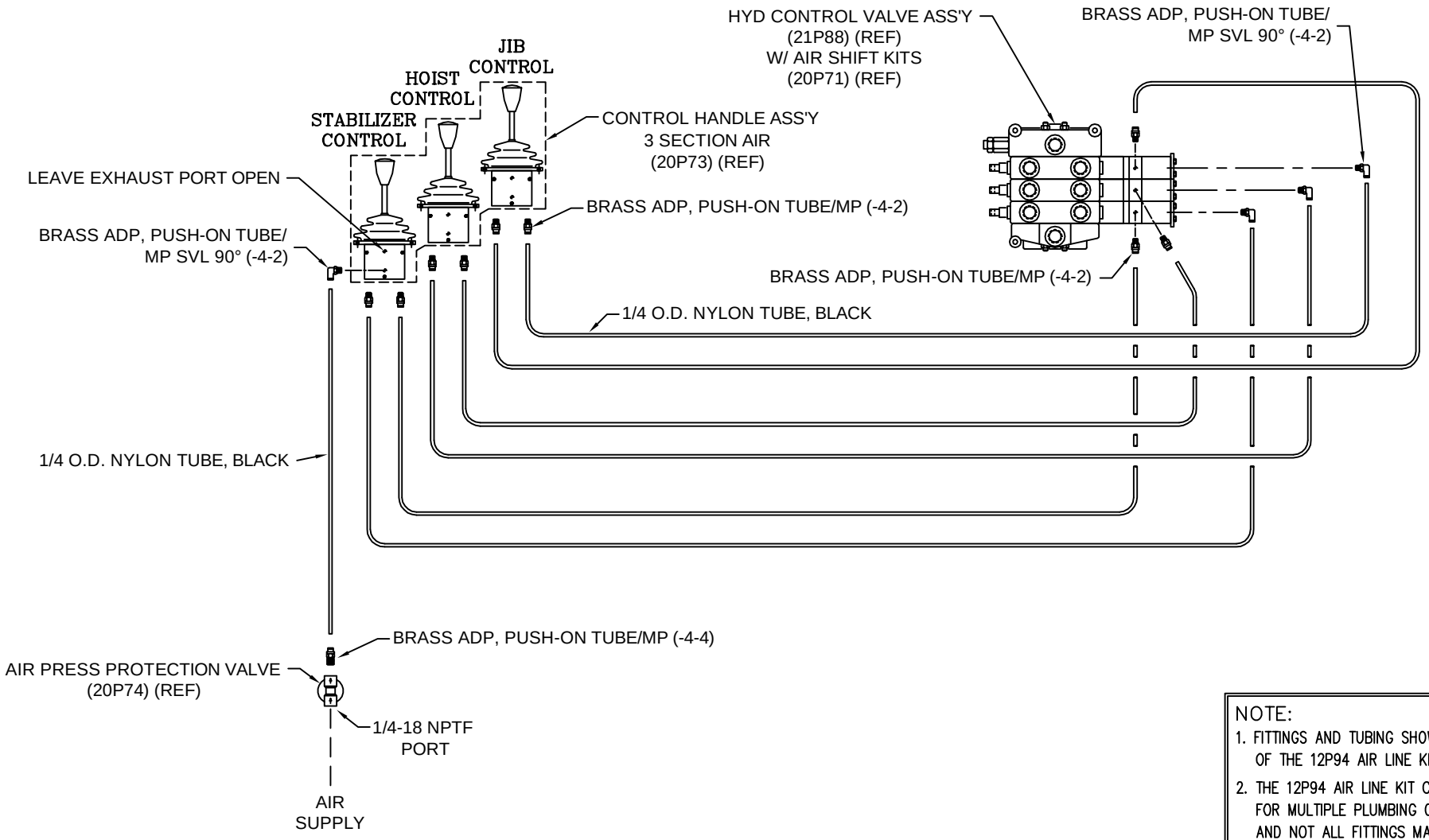
SWAPLOADER™ U.S.A. LTD.

AIR CONTROL ASS'Y - 3 SECTION

SL-330/400/406/412

90H69 ~ REV B

PT-90H69.dwg 07/17/09 08:30


JIB CONTROL
HOIST CONTROL
STABILIZER CONTROL
HYD CONTROL VALVE ASS'Y (21P88) (REF) W/ AIR SHIFT KITS (20P71) (REF)
BRASS ADP, PUSH-ON TUBE/ MP SVL 90° (-4-2)
CONTROL HANDLE ASS'Y 3 SECTION AIR (20P73) (REF)
LEAVE EXHAUST PORT OPEN
BRASS ADP, PUSH-ON TUBE/MP (-4-2)
BRASS ADP, PUSH-ON TUBE/ MP SVL 90° (-4-2)
BRASS ADP, PUSH-ON TUBE/MP (-4-2)
1/4 O.D. NYLON TUBE, BLACK
1/4 O.D. NYLON TUBE, BLACK
BRASS ADP, PUSH-ON TUBE/MP (-4-4)
AIR PRESS PROTECTION VALVE (20P74) (REF)
1/4-18 NPTF PORT
AIR SUPPLY

NOTE:

1. FITTINGS AND TUBING SHOWN ARE PART OF THE 12P94 AIR LINE KIT.
2. THE 12P94 AIR LINE KIT CONTAINS FITTINGS FOR MULTIPLE PLUMBING CONFIGURATIONS AND NOT ALL FITTINGS MAY BE UTILIZED.

SWAPLOADER™ U.S.A. LTD.

AIR CIRCUIT, CONTROL VALVE - 3 SECTION

SL-650

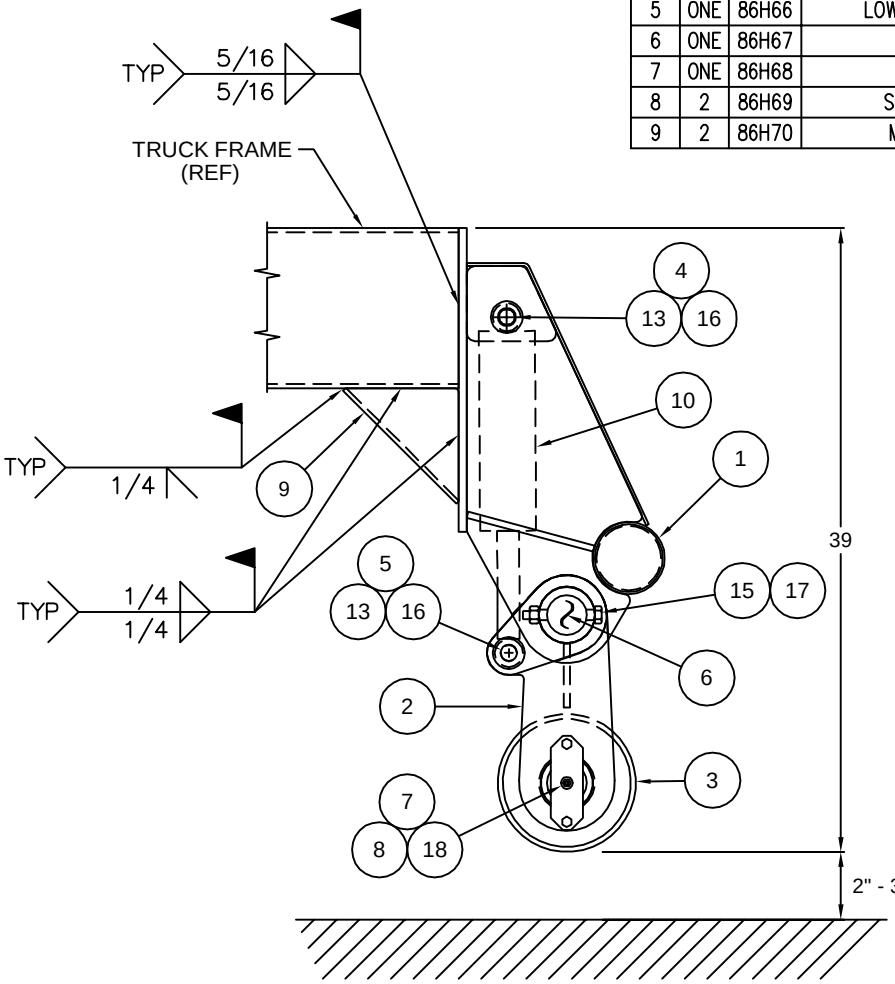
90H45 ~ REV B

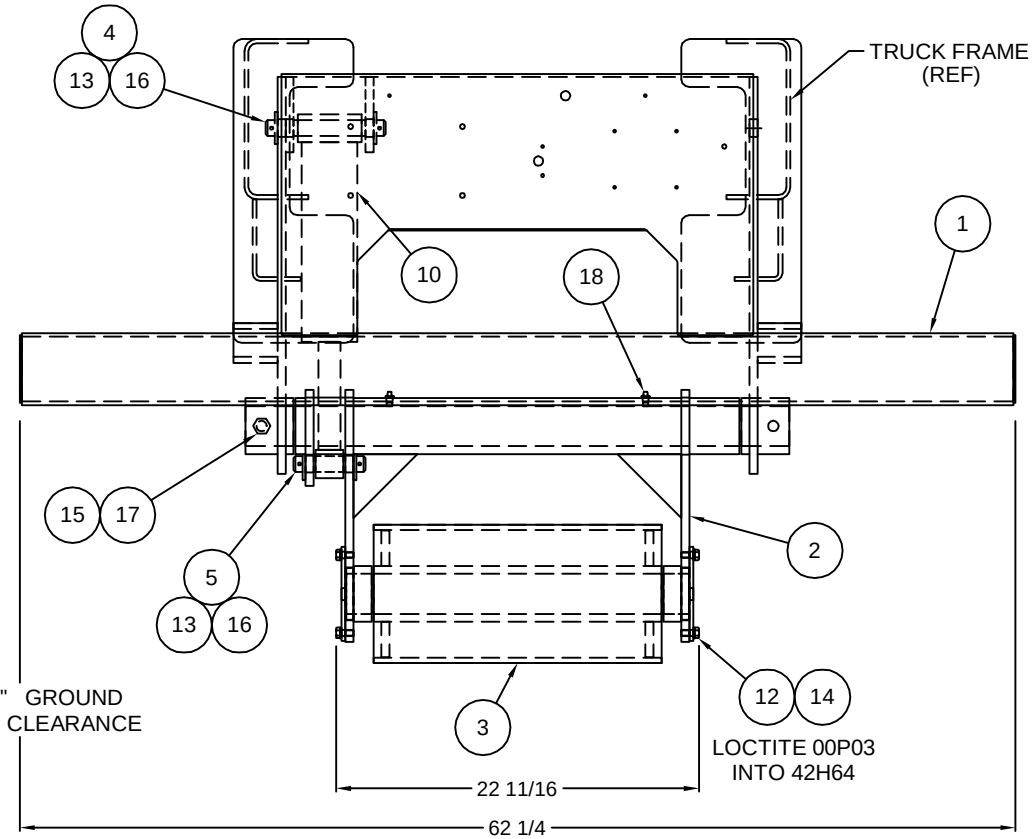
PT-90H45.dwg 07/16/09 14:58

PARTS LIST

ITEM	QTY	P/N	DESCRIPTION	WT-lb/ea	REMARKS
1	ONE	42H63	STABLIZER MOUNT	180.02	
2	ONE	42H64	STABILIZER ARM	64.65	
3	ONE	42H65	STABILIZER ROLLER	78.10	
4	ONE	86H65	UPPER CYLINDER PIN	1.55	
5	ONE	86H66	LOWER CYLINDER PIN	0.88	
6	ONE	86H67	UPPER SHAFT	39.38	
7	ONE	86H68	LOWER SHAFT	26.20	
8	2	86H69	SHAFT RETAINER	0.71	
9	2	86H70	MOUNT GUSSET	3.74	

ITEM	QTY	P/N	DESCRIPTION	WT-lb/ea	REMARKS
10	ONE	21P84	HYDRAULIC CYLINDER 3ø x 6	35.00	
11	ONE	90H83	STABILIZER HYDRAULIC CIRCUIT	21.20	NOT SHOWN
12	4	00755	3/8ø LOCK WASHER	0.01	GR 8
13	4	00787	1ø FLAT WASHER H.T.	0.13	F-436
14	4	00P03	3/8-16 x 3/4 HHCS	0.04	GR 8
15	ONE	00P55	5/8-11 LOCKING HEX NUT	0.11	GR 8
16	4	00P98	5/32ø x 1 1/2 COTTER PIN	0.01	
17	ONE	01P39	5/8-11 x 4 1/2 HHCS	0.49	GR 8
18	4	90P03	1/8 NPT ZERK STR	0.01	
				457.28	TOTAL





SWAPLOADER™ U.S.A. LTD.

STABILIZER

FINAL ASSEMBLY

42H62

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1800 NE Broadway Avenue, Des Moines, Iowa, U.S.A. 50313-2644
Phone: (515) 266-3042 • Fax: (515) 313-4426 • Toll Free: (888) 767-8000
E-Mail: sales@swaploader.net • Web Site: www.swaploader.com